

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



erve  
241  
13

# Pesticides

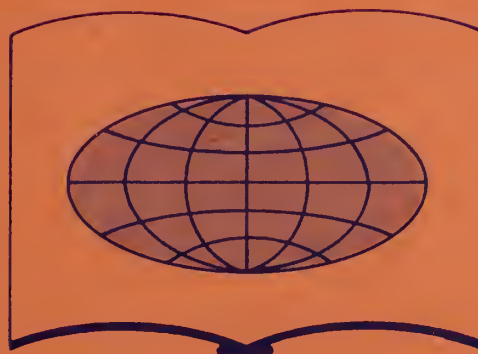
## DOCUMENTATION

## BULLETIN

U. S. DEPT. OF AGRICULTURE  
NATIONAL AGRICULTURAL LIBRARY

JAN 6 1970

CURRENT SERIAL RECORDS



Volume 5  
August 22, 1969

Number 17



*Use Pesticides Safely*  
**FOLLOW THE LABEL**

U.S. DEPARTMENT OF AGRICULTURE



# PESTICIDES DOCUMENTATION BULLETIN

Volume 5  
August 22, 1969  
Number 17

A Bi-Weekly Publication of U.S. Department of Agriculture

## OBJECTIVES AND SCOPE

The *Pesticides Documentation Bulletin* is compiled by the National Agricultural Library's Pesticides Information Center to facilitate national research efforts in all aspects of pest control. This bi-weekly index to the literature includes coverage of diseases, insects, nematodes, parasites, weeds and other pests affecting plants, animals, man, our natural resources and other values in man's environment. Special emphasis is given to the literature on toxicological, physiological and epidemiological aspects of pests and their control by chemical biological and integrated methods.

For broader coverage of literature on agriculture and related subjects, please consult the *Bibliography of Agriculture*, a monthly publication of the National Agricultural Library.

## FORMAT

The *Bulletin* is a categorized bibliography, with citations arranged alphabetically by author under the following major subjects:

- 10 Entomology
- 20 Crop Protection
- 30 Livestock Protection
- 40 Commodity Protection
- 50 Environmental Contamination
- 55 Residues
- 60 Toxicology
- 65 Plant Physiology & Biochemistry
- 70 Chemistry
- 80 Engineering
- 90 Industry

**Citations:** Each citation consists of an accession number assigned serially with the last two digits representing the Bulletin's issue year, i.e. 3286-67. The citation number (minus the year) is used in all indices. Following the accession number is the full title of the article; all personal authors; an abbreviated journal title; volume, issue and inclusive page numbers; date of publication; language abbreviation, if other than English; and the National Agricultural Library's call number. Subject descriptors, patent or grant numbers, bibliographer's notes, and abstracts or extracts may follow each citation when appropriate.

**Subject Index:** Subject descriptors appear in the index followed by title arranged numerically by accession number. The Agricultural/Biological Vocabulary developed by the National Agricultural Library is used as a basic thesaurus of descriptors.

**Biographical Index:** Names of first authors are arranged alphabetically, followed by organizational affiliation and accession number.

**Author Index:** Names of personal authors are arranged alphabetically, followed by accession numbers of pertinent citations.

**Organizational Index:** Names of corporate authors or sponsoring organizations are arranged alphabetically followed by accession numbers of pertinent citations.

## Other Files

In addition to the citations contained in the Bulletin, the Pesticides Information Center maintains two other files, the INTREDIS Register and the Herbicides Data File.

The INTREDIS Register is a computer data bank in the field of forest pathology. It contains title and author references to abstracted articles including subject, country, host plant genus or species, organisms causing the diseases, abstracting journal and year of publication. The computer search uses boolean parameters in any combination of elements listed.

The Herbicides Data File consists of reports on field tests conducted by the Crops Protection Research Branch, Crop Research Division, Agriculture Research Service. Each test record contains the following items of information:

- Compound Tested
- Company furnishing the compound
- Author or Investigator
- Test Sponsor
- Date
- Location
- Mode of Application
- Rates of Application
- Soil Types
- Carriers
- Crops or Weeds tested with phytotoxicity ratings
- Associated documentation

Note: Items subject to proprietary restriction will be suppressed when appropriate.

## AVAILABILITY OF REFERENCES CITED

### Search Requests

Each item appearing on magnetic tapes in the Pesticides Information Center is fully searchable on the computer. Questions submitted to the Center should fully describe all parameters of the desired information in narrative form.

Search requests may be submitted to:

U.S. Department of Agriculture  
National Agricultural Library  
PESTICIDES INFORMATION CENTER  
Beltsville, Maryland 20705

### Loans

Most of the material in the National Agricultural Library collection may be borrowed by employees of the Department of Agriculture and by other libraries. In requesting loans, please include the Library call number found with the citation. Loan of periodicals is restricted to the Washington, D.C. area. Foreign statistical publications and rare books are loaned only by special arrangement.

### *Free Distribution*

U.S.D.A. publications: Domestic requests for publications of the United States Department of Agriculture will be supplied free to libraries and other qualified agencies and organizations upon application to the United States Department of Agriculture, Office of Information, Washington, D.C. 20250, as long as the supply lasts. Foreign institutions, organizations and agencies which issue publications may obtain U.S.D.A. publications in exchange by writing to the United States Department of Agriculture, National Agricultural Library, Exchange Unit, Washington, D.C. 20250.

State Agricultural Experiment Station and Extension Service publications are available except where noted, and as long as the supply lasts, from the issuing station or service. The National Agricultural Library does not distribute them; however, reproductions are available at regular Library rates.

### *Reproduction*

All articles listed may be obtained in microfilm or photoprint form from the United States Department of Agriculture, National Agricultural Library, Photoduplication Section, Washington, D.C., 20250. Copying charges for each periodical or book are:

**MICROFILMS:** \$1.00 for each 30 pages or fraction copied from a single article or book.

**PHOTOPRINTS:** \$1.00 for each 4 pages or fraction copied from a single article or book.

**RUSH SERVICE:** Will be furnished upon payment of \$1.00 additional for each order.

Payment must accompany the order. Cash, Library coupons, check or money order drawn to the National Agricultural Library, U.S.D.A., are acceptable. Payment for orders originating outside of the United States should be made by American bank, or by UNESCO book coupons. Superintendent of Documents coupons and requests to furnish photocopy to be paid from Superintendent of Documents Deposit funds cannot be honored. Credit may be extended only to Government agencies and institutions. Billing address should be indicated.

### *Magnetic Tape Files*

The files of the *Pesticides Documentation Bulletin*, its Vocabulary, the Herbicides Data, and INTREDIS are available on magnetic tape for the IBM-360 series computer. All tapes are nine-track, 800 bpi.

Tape prices are \$60.00 for the first tape reel on an order plus \$47.50 for each additional reel of magnetic tape. Tape orders may be submitted to:

U.S. Department of Agriculture  
National Agricultural Library  
AUTOMATION STAFF  
Beltsville, Maryland 20705

### *Library Coupons*

National Agricultural Library coupons, valued at \$1.00 each, may be purchased in any quantity.

---

## ACKNOWLEDGMENT

The Pesticides Information Center, National Agricultural Library, gratefully acknowledges the cooperation and assistance of the Department of Defense; Health, Education, and Welfare; and Interior; the Federal Committee on Pest Control, and state and industrial organizations in the development of the Center and preparation of this Bulletin. Special thanks are expressed to the Federal Committee on Pest Control for its suggestions and support. We hope the Bulletin will serve as an example of the effectiveness of interdepartmental cooperation and the speed with which effective services can be developed through a coordinated and cooperative interdepartmental effort.

Use of funds for printing this publication approved by the Director of the Bureau of the Budget (May 23, 1968).

PLEASE GIVE COMPLETE BIBLIOGRAPHIC INFORMATION AS IT APPEARS IN THIS PUBLICATION FOR EACH ITEM REQUESTED.

This publication reports research involving pesticides. It does not contain recommendations for their use, nor does it imply that the uses discussed here have been registered. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.

**CAUTION:** Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife—if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. \$32.00 per year, domestic; \$40.00 per year, foreign. Single copies vary in price.

## TABLE OF CONTENTS

### BIBLIOGRAPHY (Citations)

|                                         | <i>Page</i> |
|-----------------------------------------|-------------|
| 10 ENTOMOLOGY.....                      | 1           |
| Systematics.....                        | 1           |
| Physiology and Biochemistry.....        | 4           |
| Genetics.....                           | 12          |
| Medical Entomology.....                 | 13          |
| 20 CROP PROTECTION.....                 | 13          |
| Diseases.....                           | 13          |
| Arthropods.....                         | 15          |
| Nematodes.....                          | 17          |
| Weeds.....                              | 17          |
| Other Pests.....                        | 19          |
| 30 LIVESTOCK PROTECTION.....            | 19          |
| Diseases.....                           | 19          |
| Arthropods.....                         | 21          |
| Parasites.....                          | 21          |
| 40 COMMODITY PROTECTION.....            | 22          |
| Storage Diseases.....                   | 22          |
| Arthropods.....                         | 22          |
| Rodents and Other Pests.....            | *           |
| Microbial Contamination.....            | *           |
| 50 ENVIRONMENTAL CONTAMINATION.....     | 22          |
| 55 RESIDUES.....                        | 22          |
| 60 TOXICOLOGY.....                      | 23          |
| 65 PLANT PHYSIOLOGY & BIOCHEMISTRY..... | 24          |
| 70 CHEMISTRY.....                       | 25          |
| 80 ENGINEERING.....                     | 26          |
| 90 INDUSTRY.....                        | 26          |
| Economics.....                          | 26          |
| Education.....                          | 26          |
| Regulations.....                        | *           |
| SUBJECT INDEX.....                      | 27          |
| BIOGRAPHICAL INDEX.....                 | 79          |
| AUTHOR INDEX.....                       | 87          |
| ORGANIZATIONAL INDEX.....               | 91          |

\*This issue does not contain citations under this category.

Note: Mention of a company name or a proprietary product does not necessarily imply endorsement by the U.S. Department of Agriculture, NATIONAL AGRICULTURAL LIBRARY, PESTICIDES INFORMATION CENTER.





## ENTOMOLOGY

## SYSTEMATICS

9865-69

NEW SPECIES OF CRANE FLIES FROM TROPICAL AMERICA. V. (DIPTERA: TIPULIDAE).

C P Alexander

*Kans Entomol Soc J* 42(1):83-90

Jan 1969 420 K13

Insect taxonomy, Tipulidae, Zoogeography.

9866-69

NEW OR LITTLE-KNOWN SPECIES OF EXOTIC TIPULIDAE (DIPTERA). XVI.

C P Alexander

*Roy Entomol Soc London Proc Ser B Taxonom*

38(3-4):33-39

06 May 1969 420 L84PB

Insect taxonomy, Tipulidae.

9867-69

GALL-INHABITING LIOTHIRPS UZEL FROM INDIA.

T N Ananthakrishnan A Jagadish

*Oriental Insects* 2(2):205-217

Jun 1968 QL461.07

Gall-making insects, Habitats, Insect identification, Insect taxonomy.

The following species were described: *Liothrips ater*, *L. boscii*, *L. cecidii*, *L. eugeniae*, *L. flavescens*, *L. furvus*, *L. nubilis* and *L. strigosus*.

9868-69

A NEW SUB-GENUS AND SPECIES OF THE EUMENINAE (HYMENOPTERA, DIPLOPTERA) FROM THE BULGARIAN FAUNA. (GE)

N Atanassov

*Bulgarska Akad Nauk Zool Inst Muz Izv* 23:167-174

1967 410.9 B8721

Eumenidae, Insect taxonomy, Zoogeography. Russian abstract.

9869-69

A NEW GENUS OF NOTERIDAE (COLEOPTERA: NOTERIDAE, NOTERINI).

J Balfour-Browne

*Roy Entomol Soc London Proc Ser B Taxonom*

38(1-2):5-6

18 Mar 1969 420 L84PB

Insect taxonomy, Noteridae.

9870-69

NEW SPECIES OF CHRYSOBOTHIRIS FROM THE PACIFIC NORTHWEST (COLEOPTERA: BUPRESTIDAE).

W F Barr

*Entomol Soc Wash Proc* 71(2):117-132

Jun 1969 420 W27

Buprestidae, Chrysobothris, Insect morphology, Insect taxonomy, Pacific Northwest, Zoogeography.

The seven new species described are: *Chrysobothris horningi*, *C. westcottii*, *C. potentillae*, *C. idahoensis*, *C. breviloboides*, *C. beeri*, and *C. columbiana*.

9871-69

CHLOROPIDAE (DIPTERA), UNKNOWN IN THE FAUNA OF BULGARIA. (RUS)

V Beshovski

*Bulgarska Akad Nauk Zool Inst Muz Izv* 26:33-38

REF

1968 410.9 B8721

Chloropidae, Insect taxonomy, Surveys. English abstract.

9872-69

THE LARVAE OF ODONATA IN THE VASCULAR TERRITORY OF STAGNANT WATERS IN BULGARIA. (RUS)

V L Beshovski

*Bulgarska Akad Nauk Zool Inst Muz Izv* 26:5-27

1968 410.9 B8721

Insect ecology, Insect taxonomy, Larvae, Odonata, Surveys, Zoogeography. German abstract.

9873-69

YESPIDAE FROM BULGARIA (HYMENOPTERA, DIPLOPTERA). (GE)

P Bluthgen

*Bulgarska Akad Nauk Zool Inst Muz Izv* 23:229-234

1967 410.9 B8721

Surveys, Vespidae. Russian abstract.

9874-69

A NEW FAMILY TURANONISCIDAE FAM. N. (ISOPODA, ONISCOIDEA) FROM TERRITARIA OF MIDDLE ASIA. (RUS)

E V Borutzky

*Zool Zhur* 48(4):499-504

Apr 1969 410 R92

Insect nests, Insect taxonomy, Isopoda, Termites. English abstract.

9875-69

A NEW POLYMIXIS HB. OF SPAIN. POLYMIXIS LAJONQUIEREI BRSN. (SUPPLEMENTAL DESCRIPTION (1)) CONTRIBUTION TO THE STUDY OF NOCTUIDAE TRIFINAE 159(2). (FR)

C Boursin

*Entomops* (9):32-35

28 Sep 1967 QL461.E53

Insect genetics, Insect identification, Insect taxonomy, Noctuidae.

9876-69

THE IDENTIFICATION AND DISTRIBUTION OF QUADRASPIDIOTUS SPECIES (HOMOPTERA: DIASPIDIDAE) ON POME AND STONE FRUITS IN AUSTRALIA.

H M Brookes N M Hudson

*Entomol Soc Australia (nsw) J* 7(2):90-100

REF

31 Dec 1968 423.92 EN84

Aspidiotus, Diaspididae, Fruit, Insect taxonomy, Zoogeography.

Four species of *Quadraspidiotus* have been identified on pome and stone fruit trees in Australia, viz. *Q. lenticularis* (Lind.), *Q. ostreaeformis* (Curt.), *Q. perniciosus* (Comst.) and *Q. pyri* (Licht.). Keys differentiating these species have been provided for second instar nymphs and adult females. Both stages in the four species are described in detail and illustrated. Present known distribution of these species in the Australian states is included.

9877-69

CERCYONIS PEGALA ABBOTTI, NEW SUBSPECIES (LEPID., SATYRIDAE).

F M Brown

*Entomol News (philadelphia)* 80(7):193-196

Jul 1969 421 EN88

Insect taxonomy, Satyridae.

9878-69

LATHRIDIUS BIFASCIATUS REITT. (COL., LATHRIDIIDAE) HABITATS.

F D Buck

*S London Entomol Natur Hist Soc Proc Trans*

9(4):99

Dec 1967 420 SO8

Insect ecology, Lathridiidae.

9879-69

REVISION OF THE NEARCTIC MOTH GENUS ABAGROTIS SMITH WITH DESCRIPTIONS OF NEW SPECIES (LEPIDOPTERA: NOCTUIDAE). PART VI THE DUANCA AND PLACIDA GROUPS; CHECKLIST OF THE PRESENTLY KNOWN SPECIES WITHIN THE GENUS.

J S Buckett

*Calif Bur Entomol Occas Pap* (17):3-27

REF

1969 420 C122

Insect taxonomy, Noctuidae, Surveys, Zoogeography.

9880-69

BUTTERFLIES HT COLLOBRIERES, VAR. ALPES MAURES, PROVENCE IN JULY AND AUGUST 1967.

P Calderara

*S London Entomol Natur Hist Soc Proc Trans*

9(4):100-102

Dec 1967 420 SO8

Lepidoptera, Seasonal variation, Surveys.

9881-69

A CHANGE IN THE LEPIDOPTERA OF HAMPTON AFTER FOUR DECADES.

C I Carter

*S London Entomol Natur Hist Soc Proc Trans*

9(4):123-125

Dec 1967 420 SO8

Lepidoptera, Surveys.

9882-69

EAR MITES OF THE GENUS DICROCHELES (ACARINA: MESOSTIGMATA) FOUND ON NOCTUIDS IN HAWKES BAY.

T H Davies

*New Zeal Entomol* 4(2):26-32

Apr 1969 421 N48

Ears, Insect behavior, Mesostigmata, Mites, Noctuidae, Parasitic insects.

9883-69

STUDY OF THE WORLD GYPONINAE (HOMOPTERA: CICADELLIDAE). A SYNOPSIS OF THE GENUS CLINONARIA.

D M DeLong P H Freytag

*Ohio J Sci* 69(3):129-182

May 1969 410 OH3

Cicadellidae, Insect taxonomy, Surveys, Zoogeography.

9884-69

TWO NEW PALEARCTIC LITHOCOLLETIS SPECIES. (PRELIMINARY DESCRIPTION). (GE)

G Deschka

*Wien Entomol Ges Z* 78(9-10):84-85

15 Dec 1967 421 OS7

Gracillariidae, Insect taxonomy, Zoogeography.

9885-69

DESCRIPTION OF DENDROCERUS (T-MACROSTIGMA) NOUMEAE SP. NOV. FROM NEW CALEDONIA (CERAPHRONOIDEA, MEGASPIIIDAE). (FR)

P Dessart

*Entomophaga* 12(4):343-349

1967 421 EN835

Ceraphronidae, Insect ecology, Insect taxonomy, Zoogeography. English abstracts.

9886-69

A NOTE: SOME RECORDS OF AUSTRALIAN NOCTUIDAE IN NEW ZEALAND.

J S Dugdale

*New Zeal Entomol* 4(2):13-14

Apr 1969 421 N48

Noctuidae, Surveys.

9887-69

A NEW SPECIES OF EPHYDRELLA TONNOIR AND MALLOCH (DIPTERA: EPHYDRIDAE).

L J Dumbleton

*New Zeal Entomol* 4(2):38-46

REF

Apr 1969 421 N48

Ephydriidae, Insect taxonomy.

9888-69

NEW SIMULIIDAE (DIPTERA) FROM NEW CALEDONIA AND NORFOLK ISLAND.

L J Dumbleton

*New Zealand J Sci* 12(2):213-222

Jun 1969 514 N482

Insect taxonomy, Simuliidae.

9889-69

CHARACTERS FOR IDENTIFICATION OF SOME COMMON PLUSINE CATERPILLARS OF THE SOUTHEASTERN UNITED STATES.

T D Eichlin H B Cunningham  
*Entomol Soc Amer Ann* 63(3):507-510  
May 1969 420 EN82  
Insect taxonomy, Larvac, Plusiinae.

9890-69  
CONTRIBUTION TO THE KNOWLEDGE OF  
THE STAPHYLINIDAE. CI. DIVERSE RE-  
MARKS ON SOME QUESADIA FROM THE  
EASTERN MEDITERRANEAN. (FR)

G Fagel  
*Inst Roy Sci Natur Belg Bull* 44(12):1-13  
25 Feb 1968 504 B835B  
Insect taxonomy, Quesadia, Zoogeography.

9891-69  
ALLOMORPHUS FRANZI, N. GEN., N. SPEC.  
(COLEOPTERA, CURCULIONIDAE), A NEW  
SPECIES AND GENUS FROM AUSTRIA. 8.  
CONTRIBUTION TO THE KNOWLEDGE OF  
THE PALEARCTIC COSSONINAE. (GE)

B Folwaczny  
*Entomol Bl* 64(1):41-42  
15 Jul 1968 421 EN833  
Allomorphus franzi, Cossoninae, Curculionidae,  
Insect taxonomy.

9892-69  
CONTRIBUTION TO THE KNOWLEDGE OF  
THE COCCIDAE FROM BRAZIL (HOMOP-  
TERA-COCCIDAE). (POR)

J P de Fonseca  
*Sao Paulo Inst Biol Arq* 36(1 JAN-MAR):9-40  
REF  
Mar 1969 442.9 SA6  
Coccoidea, Insect taxonomy.

Three new genera, nine new species and two new  
sub-species of the Coccoidea, are described in this  
paper, as well as Pseudoparlatoria caucae  
Balachowsky, from Columbia, which has been  
recently found in Brazil.

9893-69  
SCYMUS (SIDIS) HIEKEI FURSCH, AS A FOF  
OF PSEUDOCOCCUS CITRI RISSO. (GE)

H Fursch  
*Entomophaga* 12(3):309-310  
1967 421 EN835  
Coccinellidae, Insect taxonomy, Planococcus citri,  
Predaceous insects, Scymus. French abstract.

9894-69  
RESULTS OF AN AUSTRIAN LEPIDOPTERA  
COLLECTING TRIP TO SYRIA AND  
LEBANON. (PART V.: EPERMENIIDAE). (GE)

R Gaedike  
*Wien Entomol Ges Z* 78(9-10):85-88  
421 OS7  
Epermeniidae, Insect taxonomy, Surveys.

9895-69  
THOMISUS ONUSTUS WALCK. (ARACHNIDA)  
RECORDED IN ERROR FROM THURSLEY  
COMMON SURVEY.

P A Goddard  
*S London Entomol Natur Hist Soc Proc Trans*  
7(6,PT 1):14  
Mar 1967 420 SO8  
Arachnida, Insect taxonomy.

9896-69  
CNEMACANTHA ILLOTA (LOEW) (DIPT.,  
LAUXANIIDAE) RECORDED IN ERROR FROM  
STANMORE COMMON, MIDDX.

P A Goddard  
*S London Entomol Natur Hist Soc Proc Trans*  
7(6,PT 1):12  
Mar 1967 420 SO8  
England, Insect taxonomy, Lauxaniidae.

9897-69  
ORIENTAL SPECIES OF COESULA CAMERON  
(HYMENOPTERA: ICHNEUMONIDAE).

V K Gupta J K Jonathan  
*Oriental Insects* 2(2):155-193 MAP  
Jun 1968 QL461.07

Ichneumonidae, Insect identification, Insect tax-  
onomy, Zoogeography. 11 new species and 5 new  
subspecies are described.

9898-69  
A NEW DROSOPHILA SPECIES FROM  
NORTHERN FENNOSCANDIA (DIPTERA).

W Hackman  
*Notulae Entomol* 49(2):69-72  
1969 421 N84  
Drosophila, Insect taxonomy.

9899-69  
THE OCCURRENCE OF DANIS HYMETUS  
TAYGETUS (FELDER) AT BAYVIEW, NEW  
SOUTH WALES.

L C Haines  
62  
24 Apr 1969 410.9 N48P  
Insect taxonomy, Lyaenidae. Proceedings for the  
years 1967-68

9900-69  
THE TIGER MOTHS OF THE COUNTY OF  
CUMBERLAND, NEW SOUTH WALES.

L C Haines  
59-61  
24 Apr 1969 410.9 N48P  
Arctiidae, Surveys. Proceedings for the years 1967-  
68.

9901-69  
A KEY TO THE SPECIES OF CARCINOPS  
MARSEUL (COLEOPTERA, HISTERIDAE) AS-  
SOCIATED WITH STORED PRODUCTS, IN-  
CLUDING C. TROGLODYTES (PAYKULL)

NEW TO THIS HABITAT.  
D G H Halstead  
*J Stored Prod Res* 5(1): 83-85  
May 1969 421 J829  
Histeridae, Insect taxonomy, Stored products, Sur-  
veys.

9902-69  
LIST OF INSECT AND OTHER INVER-  
TEBRATE TYPES IN THE MIGUEL LILLO IN-  
STITUTE. (3RD LIST). (SP)

K J Hayward  
*Acta Zool Lilloana* 22:337-352  
1967 410 AC82  
Catalogs, Insect collection.

9903-69  
THREE NEW SPECIES OF GENOS BLAPTICA,  
STAL., 1874 (DIPTOPTERA, BLABERIDAE OF  
THE REPUBLIC OF ARGENTINA). (SP)

H C Hepper  
*Acta Zool Lilloana* 22:221-229  
1967 410 AC82  
Blaberidae, Insect taxonomy. English abstract.

9904-69  
CADDIS LARVAE.

N E Hickin  
*S London Entomol Natur Hist Soc Proc Trans*  
9(4):102  
Dec 1967 420 SO8  
Larvae, Reviews, Trichoptera.

9905-69  
SYNONYMY OF KEIFERIA GLOCHINELLA  
(ZELLER) AND RELATED NAMES (LEPIDOP-  
TERA: GELECHIIDAE).

R W Hodges  
*Entomol Soc Wash Proc* 71(1):34-37 MAP REF  
Mar 1969 420 W27  
Gelechiidae, Insect taxonomy, Isophrietis similis-  
la, Keiferia glochinella, Keiferia inconspicua.

9906-69  
A NEW SPECIES OF TRICHACOIDES FROM  
INDIA WITH A REDESCRIPTION OF T. SCU-  
TELLARIS DODD (HYMENOPTERA:

PLATYGASTERIDAE).  
D Jackson  
*Roy Entomol Soc London Proc Ser B Taxonom*  
37(9-10):121-124  
22 Nov 1968 420 L84PB

Insect taxonomy, Platygasteridae.

A second species of Trichacoides Dodd, parasitic  
on Procontarinia sp. (Cecidomyiidae), is described  
from India. The first description of a male of this  
genus is given. Trichacoides scutellaris Dodd, the  
type species, is redescribed and illustrated, and a  
revised generic diagnosis presented.

9907-69  
PALEARCTIC SPECIES FROM THE GENUS  
PHYMATA LATREILLE, 1802 (HEM. HET.  
REDUVIIDAE). (RUS)

M Josifov  
*Bulgarska Akad Nauk Zool Inst Muz Izv* 26:29-32  
1968 410.9 B8721  
Insect taxonomy, Reduviidae.

9908-69  
THE SUBGENUS PERSICARGAS (IXODOIDEA,  
ARGASIDAE, ARGAS). 7. A. (P.) WALKERAE,  
NEW SPECIES, A PARASITE OF DOMESTIC  
FOWL IN SOUTHERN AFRICA.

M N Kaiser H Hoogstraal  
*Entomol Soc Amer Ann* 62(4):885-889  
Jul 1969 420 EN82  
Argas, Insect taxonomy, Parasitic insects, Poultry,  
Zoogeography.

9909-69  
A REVISION OF THE PSEU-  
DOMORPHACRIDINI (ORTHOPTERA: ACRI-  
DOIDEA: PYRGOMORPHIDAE).

D K M Kevan  
*Oriental Insects* 2(2):141-154 MAP  
Jun 1968 QL461.07  
Insect identification, Insect taxonomy, Orthoptera,  
Pyrgomorphidae, Zoogeography.

9910-69  
A NEW SPECIES OF FICALBIA  
(RAYENALITES) FROM CAMBODIA (DIP-  
TERA: CULICIDAE).

J M Klein  
*Entomol Soc Wash Proc* 71(2):215-217  
Jun 1969 420 W27  
Culicidae, Ficalbia, Insect morphology, Insect tax-  
onomy, Zoogeography.

9911-69  
MITES OF THE SUPER-FAMILY  
GAMASOIDEA ON MICROMAMMALIA IN  
THE WESTERN BALKAN RANGE. (RUS)

M Koyumdjieva  
*Bulgarska Akad Nauk Zool Inst Muz Izv* 26:47-49  
1968 410.9 B8721  
Acarina, Mammals, Surveys. English abstract.

9912-69  
OCHROMOLOPIS ICTELLA HB. (LEPIDOP-  
TERA, EPERMENIIDAE) IN FINLAND,  
PROBABLY TRANSPORTED BY WINDSTORM.  
(GE)

H Krogerus  
*Notulae Entomol* 49(2):86-88 MAP  
1969 421 N84  
Epermeniidae, Insect dissemination, Insect  
morphology, Wind dispersal.

9913-69  
AMPHIPYRA PYRAMIDEA L. AND A.  
BERBERA RUNGS IN FINLAND (LEPIDOP-  
TERA, NOCTUIDAE). (GE)

H Krogerus  
*Notulae Entomol* 49(2):83-85  
1969 421 N84  
Amphipyra herbera, Amphipyra pyramidea, Insect  
morphology, Zoogeography.

9914-69  
A NEW SPECIES OF MESIDIA (HYMENOP-  
TERA: APHELINIDAE) FROM CALIFORNIA.

C F Lagace  
*Entomol Soc Amer Ann* 63(3):530-531  
May 1969 420 EN82  
Aphelinidae, Insect taxonomy.



- 9915-69**  
ON SERGENTOMYIA RUTLEDGEI (LEWIS KIRK) AND S. SCHWETZI (ADLER, THEODOR PARROT) (DIPTERA: PSYCHODIDAE).  
D J Lewis G R Barnley D M Minter  
*Roy Entomol Soc London Proc Ser B Taxonom* 38(3-4):53-60 REF  
06 May 1969 420 1.84PB  
Insect taxonomy, Psychodidae.
- 9916-69**  
NEW MYMARIDAE FROM CENTRAL AFRICA. (HYMENOPTERA: CHALCIDOIDEA). (FR)  
G Mathot  
*Rev Zool Bot Afr* 78(3/4):265-276  
30 Dec 1968 410 R26  
Acmopolynema, Anagrus, Hymenoptera, Insect identification, Insect taxonomy, Lymaenon, Mymaridae, Zoogeography. Several new species of the three genera are described.
- 9917-69**  
A NEW SPECIES OF EPIDERMOPTES FROM A SOUTH DAKOTA PHEASANT (ACARINA: EPIDERMOPTIDAE).  
B McDaniel G C Parikh  
*Kans Entomol Soc J* 42(1):34-38  
Jan 1969 420 K13  
Epidermoptidae, Insect taxonomy.
- 9918-69**  
A NEW SPECIES OF CHRYSOMELA (COLEOPTERA, CHRYSOMELIDAE)-AN IMPORTANT COMPONENT OF THE TAIMYR PENINSULA BIOCOENOSES. (RUS)  
I. N Medvedev Yu I Chernov  
*Zool Zhur* 48(4):532-537  
Apr 1969 410 R92  
Chrysomelidae, Insect ecology, Insect taxonomy. English abstract
- 9919-69**  
THE GENUS HETEROCONIS ENDERLEIN, 1905 (NEUROPTERA, CONIOPTERYGIDAE).  
M Meinander  
*Notulae Entomol* 49(2):49-68  
1969 421 N84  
Coniopterygidae, Insect taxonomy, Zoogeography.
- 9920-69**  
FURTHER RECORDS OF THE DISTRIBUTION OF PETROBIA LATENS (MULLER) (ACARINA: TETRANYCHIDAE), A PEST OF WHEAT IN INDIA TOGETHER WITH THE DESCRIPTION OF A NEW SPECIES OF PREDATORY MITES ON THE SAME.  
M G R Menon S Ghai  
*Indian J Entomol* 30(1):77-79  
Mar 1968 420 IN23  
Petrobia latens, Predaceous insects, Wheat, Zoogeography.
- 9921-69**  
THREE NEW RECORDS OF BRYOBIINAE FROM INDIA (ACARINA: TETRANYCHIDAE).  
Menon S Ghai  
*Indian J Entomol* 30(1):88-89  
Mar 1968 420 IN23  
Surveys, Tetranychidae.
- 9922-69**  
PRESENTATION OF AQUATIC HETEROPTERAN FAUNA II, AQUATIC HETEROPTERA FROM EVORA, PORTUGAL. (FR)  
N Nieser  
*Entomol Ber* 29(1):2-6 REF  
01 Jan 1969 420 N38B  
Aquatic insects, Heteroptera, Surveys. English abstract.
- 9923-69**  
A NEW DANAUS SPECIES FROM CENTRAL-CELEBES.  
E J Nicuwenhuis  
*Entomol Ber* 29(1):18-19  
01 Jan 1969 420 N38B  
Danaus, Insect taxonomy.
- 9924-69**  
THE STRUCTURE OF POLYMORPHIC SPECIES OF THE SUBGENUS AUTOLETHRUS (COLEOPTERA, SCARABAEIDAE) FROM SOUTH KAZAKHSTAN. (RUS)  
G V Nikolajev  
*Zool Zhur* 48(4):524-531  
Apr 1969 410 R92  
Insect taxonomy, Polymorphism, Scarabaeidae. English abstract.
- 9925-69**  
CORRECTION TO THE KEY OF THE EUROPEAN GYRINUS SPECIES. (GE)  
G Oehs  
*Entomol Bl* 64(1):64  
15 Jul 1968 421 EN833  
Gyrinidae, Gyrinus, Insect taxonomy.
- 9926-69**  
NEW MIMARIDS OF ARGENTINA (HYMENOPTERA: MYMARIDAE). (SP)  
A A Oglohin  
*Acta Zool Lilloana* 22:183-196  
1967 410 AC82  
Insect taxonomy, Mymaridae. English abstract.
- 9927-69**  
THE FAMILY LEPTOGASTRIDAE (DIPTERA).  
H Oldroyd  
*Roy Entomol Soc London Proc Ser B Taxonom* 38(1-2):27-31  
18 Mar 1969 420 L84PB  
Asilidae, Insect names, Insect taxonomy, Leptogaster.
- 9928-69**  
BULGARIAN GRASSHOPPERS (HOMOPTERA: AUCHENORRHYNCHA). (RUS)  
P Pelov  
*Bulgarska Akad Nauk Zool Inst Muz Izv* 26:159-171 REF  
410.9 B8721  
Homoptera, Insect taxonomy, Surveys. German abstract.
- 9929-69**  
THE BUTTERFLIES OF LORD HOWE ISLAND.  
J V Peters  
63-64  
24 Apr 1969 410.9 N48P  
Lepidoptera, Surveys. Proceedings for the years 1967-68
- 9930-69**  
THREE NEW SPECIES OF HETEROMENOPON (MALLOPHAGA: MENOPONIDAE) FROM BRAZILIAN AND AUSTRALIAN PARROTS.  
R D Price  
*Entomol Soc Amer Ann* 63(3):563-566  
May 1969 420 EN82  
Insect taxonomy, Menoponidae, Parrots.
- 9931-69**  
A NEW NORTH PALEARCTIC STENUS: ST. (NESTUS) CORIACEUS N. SP. (COLEOPTERA, STAPHYLINIDAE) (58. CONTRIBUTION TO THE KNOWLEDGE OF THE STENIDS). (GE)  
V Puthz  
*Notulae Entomol* 49(2):80-82  
1969 421 N84  
Insect taxonomy, Staphylinidae.
- 9932-69**  
FIRST RECORD OF AEWASIVUS ADVENA COMPERE (ENCYTRIDAE: HYMENOPTERA) FROM INDIA AS A PARASITE OF FERRISIA VIRGATA CKLL...  
R R Rawat B N Modi  
*Indian J Entomol* 30(1):85  
Mar 1968 420 IN23  
Encyrtidae, Ferrisia virgata, Parasitic insects, Surveys.
- 9933-69**  
A NEW GENUS AND KEY TO THE SPECIES OF AUSTRALIAN STILBOPTERYGIDAE (NEUROPTERA).  
E F Rick  
*Entomol Soc Australia (nsw) J* 7(2):105-108  
31 Dec 1968 423.92 EN84  
Insect taxonomy, Neuroptera.
- 9934-69**  
SPIRACLES OF ADULT SCARABAEOIDEA (COLEOPTERA) AND THEIR PHYLOGENETIC SIGNIFICANCE. I. THE ABDOMINAL SPIRACLES.  
P O Ritcher  
*Entomol Soc Amer Ann* 62(4):869-880 REF  
Jul 1969 420 EN82  
Abdomen, Insect evolution, Insect names, Insect taxonomy, Lucanidae, Passalidae, Scarabaeidae, Spiracles.
- 9935-69**  
NEOTROPICAL COCKROACHES OF THE EPILAMPRA ABDOMENNIGRUM COMPLEX; A CLARIFICATION OF THEIR SYSTEMATICS (DICTYOPEERA, BLATTARIA).  
L M Roth A B Gurnet  
*Entomol Soc Amer Ann* 63(3):617-627 REF  
May 1969 420 EN82  
Blattaria, Insect taxonomy, Neotropical Region.
- 9936-69**  
NEW SPECIES AND RECORDS OF NASUTITERMITINAE (ISOPTERA: TERMITIDAE) FROM AFRICA.  
W A Sands  
*Roy Entomol Soc London Proc Ser B Taxonom* 37(11-12):163-169 MAP  
20 Dec 1968 420 L84PB  
Insect taxonomy, Surveys, Termites, Zoogeography.
- 9937-69**  
DISTRIBUTION AND ESTABLISHMENT OF TETRASTICHUS INCERTUS IN THE EASTERN UNITED STATES.  
R F W Schroder J L Huggans D J J Horn G York  
*Entomol Soc Amer Ann* 62(4):812-815 MAP  
Jul 1969 420 EN82  
Surveys, Tetrastichus incertus, Zoogeography.  
Tetrastichus incertus (Ratzburg) (Hymenoptera: Eulophidae), a larval parasite of the alfalfa weevil, Hypera postica (Gyllenhal), has become established in 10 middle Atlantic and New England States since its initial release in New Jersey in 1960 and its subsequent release in 14 other States. The release sites and the dispersal and distribution in the Eastern United States are reported for the period from 1960 to June 1968.
- 9938-69**  
LYMANTRIIDAE--EAST VERSUS WEST AFRICA.  
D G Sevastopulo  
*S London Entomol Natur Hist Soc Proc Trans* 7(6,PT 1):15-17  
Mar 1967 420 SO8  
Insect taxonomy, Lymantriidae.
- 9939-69**  
LIMACODIDAE- EAST VERSUS WEST AFRICA.  
D G Sevastopulo  
*S London Entomol Natur Hist Soc Proc Trans* 9(4):98-99  
Dec 1967 420 SO8  
Insect taxonomy, Limacodidae.
- 9940-69**  
NEW SPECIES OF BEETLE MITES OF THE FAMILY CHAMDBATIDAE (ORIBATEI) FROM THE USSR. (RUS)  
E S Shaldybidia  
*Zool Zhur* 48(4):518-523  
Apr 1969 410 R92  
Insect taxonomy, Mites, Oribatei. English abstract.
- 9941-69**  
MORDELLISTENA PUMILA GROUP IN FINLAND (COLEOPTERA, MORDELLIDAE). (SW)  
H Silfverberg  
*Notulae Entomol* 49(2):110

- 1969 421 N84  
Mordellidae, Surveys, Zoogeography.
- 9942-69**  
**SIPHONAPTERA FROM INARI, FINLAND.**  
W Sinclair  
*S London Entomol Natur Hist Soc Proc Trans* 7(6,PT 1):13-14  
Mar 1967 420 SO8  
Insect taxonomy, Siphonaptera.
- 9943-69**  
**APHID FAUNA OF MACEDONIA. (RUS)**  
D G Taschev  
*Bulgarska Akad Nauk Zool Inst Muz Izv* 26:173-182  
1968 410.9 B8721  
Aphididae, Insect taxonomy, Surveys. German abstract.
- 9944-69**  
**A NEW MALAYAN SPECIES OF THE ANT GENUS EPITRITUS AND A RELATED NEW GENUS FROM SINGAPORE (HYMENOPTERA: FORMICIDAE).**  
R W Taylor  
*Entomol Soc Australia (nsw) J* 7(2):130-134  
31 Dec 1968 423.92 EN84  
Formicidae, Insect taxonomy.
- 9945-69**  
**PHILONTHUS PARCUS SHARP (COL., STAPHYLINIDAE) IN BRITAIN.**  
C E Tottenham  
*S London Entomol Natur Hist Soc Proc Trans* 7(6,PT 2):46-47  
May 1967 420 SO8  
Insect taxonomy, Staphylinidae.
- 9946-69**  
**NEW BULGARIAN FAUNA OF PHYTOPHAGOUS WASPS (SYMPHYTA, HYMENOPTERA). (RUS)**  
I B Vasilev  
*Bulgarska Akad Nauk Zool Inst Muz Izv* 26:183-186  
1968 410.9 B8721  
Insect taxonomy, Phytophagous insects, Symphyta, Zoogeography. German abstract.
- 9947-69**  
**A NEW NAME FOR THE GENUS CYRTOLABUS VAN DER VECIIT (HYMENOPTERA, EUMENIDAE).**  
J VAN DER Vetch  
*Entomol Ber* 29(1):1  
01 Jan 1969 420 N38B  
Eumenidae, Insect taxonomy, Nomenclature.
- 9948-69**  
**SOME NEW RECORDS OF BUTTERFLIES FROM NEPAL.**  
S R Wadhi B Parshad  
*Indian J Entomol* 30(1):92-93  
Mar 1968 420 IN23  
Lepidoptera, Surveys, Zoogeography.
- 9949-69**  
**ADELPHOCORIS MINOR NOV. SPEC. (HETEROPTERA, MIRIDAE). (GE)**  
E Wagner  
*Notulae Entomol* 49(2):105-107  
1969 421 N84  
Insect taxonomy, Miridae, Zoogeography.
- 9950-69**  
**ADDITIONS TO THE GENUS ALLOEONOTUS FIEBER, 1878 (HETEROPTERA, MIRIDAE). (GE)**  
E Wagner  
*Notulae Entomol* 49(2):108-110  
1969 421 N84  
Insect taxonomy, Miridae, Zoogeography.
- 9951-69**  
**NEW ORTHOTYLUS AND PACHYLOPS SPECIES (HETEROPTERA, MIRIDAE). (GE)**  
E Wagner

- Notulae Entomol* 49(2):99-104  
1969 421 N84  
Insect taxonomy, Miridae, Zoogeography.
- 9952-69**  
**SEVERAL GLOBICEPS-SPECIES (HETEROPTERA, MIRIDAE). (GE)**  
E Wagner  
*Notulae Entomol* 49(2):89-98  
1969 421 N84  
Insect taxonomy, Miridae, Surveys.
- 9953-69**  
**KEYS TO GENERA AND SOME SPECIES OF NEW ZEALAND LATHRIDIIDAE (COLEOPTERA).**  
J C Watt  
*New Zeal Entomol* 4(2):49-67 REF  
Apr 1969 421 N48  
Insect taxonomy, Lathridiidae.
- 9954-69**  
**HYPOCYPTUS NITIDUS PALM. (COL., STAPHYLINIDAE) IN THE JOY COLLECTION.**  
S A Williams  
*S London Entomol Natur Hist Soc Proc Trans* 9(4):99  
Dec 1967 420 SO8  
Insect identification, Staphylinidae.
- 9955-69**  
**QUEDIUS (MICROSAURUS) SCITUS (GRAV.) (COL., STAPHYLINIDAE) A TERATOLOGICAL SPECIMEN.**  
S A Williams  
*S London Entomol Natur Hist Soc Proc Trans* 10(3):66  
Aug 1967 420 SO8  
Insect identification, Quedius, Staphylinidae.
- 9956-69**  
**DESCRIPTION OF IMMATURE STAGES OF COREIDAE. 3. ARCHIMERUS ALTERNUS.**  
T R Yonke J T Medler  
*Entomol Soc Amer Ann* 63(3):477-480  
May 1969 420 EN82  
Coreidae, Insect eggs, Insect taxonomy, Nymphs.
- 9957-69**  
**DESCRIPTION OF IMMATURE STAGES OF COREIDAE. 1. EUTHOCHTHA GALEATOR.**  
T R Yonke J T Medler  
*Entomol Soc Amer Ann* 63(3):469-473  
May 1969 420 EN82  
Coreidae, Insect eggs, Insect taxonomy, Nymphs.
- PHYSIOLOGY AND BIOCHEMISTRY**
- 9958-69**  
**ON TWO NEW SPECIES OF TEREBRANTIAN THYSANOPTERA WITH REMARKS ON A NEW GENUS PELLOTHRIPS.**  
T N Ananthakrishnan  
*Oriental Insects* 2(2):201-204  
Jun 1968 QL461.O7  
Insect identification, Insect taxonomy, Thysanoptera, Zoogeography.
- 9959-69**  
**HELICOPTER SPRAYERS MAY RESCUE INFESTED FORESTS.**  
Anonymous  
*Agr Res* 17(11):12  
May 1969 1.98 AG84  
Aerial spraying, Biological control (insects), Forest insects, Helicopters, Hemerocampa pseudotsugata, Insect diseases, Insect pests, Polyhedroses, Spraying equipment.
- 9960-69**  
**ULTRASTRUCTURAL OBSERVATIONS ON THE BRANCHED RODS ASSOCIATED WITH SOME INSECT GRANULOSSES.**  
H J Arnott K M Smith  
*J Invertebrate Pathol* 13(3):345-350  
May 1969 421 J826  
Cytology, Electron microscopy, Granuloses, Insect diseases.
- 9961-69**  
**LACTIC DEHYDROGENASE ISOZYMES IN THE GRASSHOPPER.**  
J N Aronson J R Fish F A Muckenthaler  
*Compar Biochem Physiol* 24(2):657-659 REF  
Feb 1968 448.8 C73  
Electrophoresis, Insect biochemistry, Lactate dehydrogenase, Melanoplus differentialis, Muscles, Testes, Tissue extracts.
- 9962-69**  
**IXODES PACIFICUS COOLEY AND KOHLS, 1943: ITS LIFE-HISTORY AND OCCURRENCE.**  
D R Arthur K R Snow  
*Parasitology* 58(4):893-906 MAP REF  
Nov 1968 448.8 P21  
Animals, Insect biology, Ixodes, Life cycle, Surveys, Zoogeography.
- 9963-69**  
**DESCRIPTION OF THE MALE, PUPA, AND LARVAL HABITAT OF NILOBEZZIA BREVICORNIS (DIPTERA: CERATOPOGONIDAE).**  
W R Atchley  
*Kans Entomol Soc J* 42(1):54-57  
Jan 1969 420 K13  
Ceratopogonidae, Habitats, Insect morphology, Larvae, Pupae.
- 9964-69**  
**STUDIES ON AN ISRAEL STRAIN OF ANAGYRUS PSEUDOCOCCI (GIRAULT) (HYM., ENCARTIDAE). II. SOME BIOLOGICAL ASPECTS.**  
Z Avidov Y Rossler D Rosen  
*Entomophaga* 12(2):111-118  
1967 421 EN835  
Anagyrus pseudococci, Insect behavior, Insect biology, Longevity, Planococcus citri, Reproduction.
- 9965-69**  
**LIFE HISTORY AND HABITS OF SIALIS ROTUNDA AND S. CALIFORNICA IN WESTERN OREGON.**  
K M Azam N H Anderson  
*Entomol Soc Amer Ann* 63(3):549-558 REF  
May 1969 420 EN82  
Insect biology, Insect ecology, Sialidae.
- 9966-69**  
**SEASONAL CHANGES IN THE DISTRIBUTION OF THE MILLIPEDE CYLINDROIULUS PUNCTATUS (LEACH) IN DECAYING LOGS AND SOIL.**  
B Banerjee  
*J Anim Ecol* 36(1):171-177 REF  
Feb 1967 410 J826  
Diplopoda, Habitats, Logs, Soil sampling.
- 9967-69**  
**NOTE ON PROSPALTELLA AURANTII HOW. (HYM., APHELINIDAE), PARASITE OF QUADRASPIDIOTUS PYRI LICH. IN THE MATITIME ALPS (HOM., DIASPIDINAE). (FR)**  
C Benassy B Bianchi  
*Entomophaga* 12(2):181-186  
1967 421 EN835  
Aspidiotus pyri, Biological control (insects), Insect biology, Prospaltella aurantii, English abstract.
- 9968-69**  
**INTRACELLULAR ACTIVITY IN CRICKET NEURONS DURING THE GENERATION OF BEHAVIOUR PATTERNS.**  
D R Bentley  
*J Insect Physiol* 15(4):677-699 REF  
Apr 1969 421 J825  
Electrophysiology, Gryllus campestris, Insect behavior, Insect physiology, Nervous system.
- 9969-69**  
**SINDBIS VIRUS MULTIPLICATION AND CALIPHORA ERYTHROCEPHALA (MEIG.) METAMORPHOSIS. (FR)**



- A Berkaloff P Berreur P Cals  
*Acad Sci Compt Rend Ser D Sci Nat* 264(11, 1ST SEMESTER):1545-1548  
13 Mar 1967 505 P21  
Calliphora vicina, Hormones, Insect diseases, Insect physiology, Metamorphosis, Sindbis virus.
- 9970-69**  
NOTES ON THE BIOLOGY OF DIATRAEOPHAGA STRIATALIS TOWNSEND, TACHINID PARASITE OF PROCERAS SACCHARIPHAGUS BOJ. (FR)  
M Betheder-Natihet  
*Entomophaga* 12(2):161-173  
1967 421 EN835  
Diatraeophaga striatalis, Insect biology, Insect physiology, Predaceous insects, Proceras sacchariphagus.
- 9971-69**  
OVIPOSITION BEHAVIOUR OF THE DESERT LOCUST (SCHISTOCERCA GREGARIA FORSK.).  
K R Bhatia S C Harjai  
*Indian J Entomol* 30(2):109-112 REF  
Jun 1968 420 IN23  
Insect behavior, Insect biology, Oviposition, Schistocerca gregaria.
- 9972-69**  
AN INTEGRATED TECHNIQUE TO STUDY THE EFFECTS OF FUMIGANTS ON RESPIRATION OF INSECTS.  
S S Bhatia  
*J Stored Prod Res* 5(1):57-67 REF  
May 1969 421 J829  
Acetone, Chloroform, Ethyl ether, Fumigants, Insect physiology, Insect respiration, Methodology, Periplaneta americana.
- 9973-69**  
QUANTITATIVE DETERMINATION OF URIC ACID IN INSECT FECES BY LITHIUM CARBONATE EXTRACTION AND THE ENZY-MATIC-SPECTROPHOTOMETRIC METHOD.  
A K Bhattacharya G P Waldbauer  
*Entomol Soc Amer Ann* 62(4):925-927 REF  
Jul 1969 420 EN82  
Methodology, Quantitative analysis, Statistical analysis, Tenebrio molitor, Tenebroides mauritanicus, Uric acid.
- 9974-69**  
STUDIES ON BROOD REARING ACTIVITY OF INDIAN HONEY BEE APIS INDICA F. UNDER DELHI CONDITIONS.  
D S Bisht N C Pant  
*Indian J Entomol* 30(3):223-228  
Sep 1968 420 IN23  
Apiculture, Apis indica, Feeding, Insect nutrition, Insect physiology, Insect rearing.
- 9975-69**  
RECOVERY OF MITES FROM PEAT AND MINERAL SOILS USING A NEW FLOATATION METHOD.  
W Block  
*J Anim Ecol* 36(2):323-327 REF  
Jun 1967 410 J826  
Flotation, Methodology, Mites, Peat, Soil sampling.
- 9976-69**  
EFFECT OF TEMPERATURE ON THE DEVELOPMENT OF MUSTARD SAWFLY, ATHALIA PROXIMA KLUG. (HYMENOPTERA: TENTHREDINIDAE).  
J K Bogawat  
*Indian J Entomol* 30(1):80-82  
Mar 1968 420 IN23  
Athalia proxima, Insect biology, Insect physiology, Temperature, Tenthredinidae.
- 9977-69**  
A NEW CARADRINA O. OF SPAIN- CONTRIBUTIONS TO THE STUDY NOCTUIDAE TRIFINAE, 158(1). (FR)  
C Boursin  
*Entomops* (9):29-31  
28 Sep 1967 QL461.E53
- Insect identification, Insect taxonomy, Noctuidae.
- 9978-69**  
OBSERVATIONS ON THE LIFE HISTORY AND BIONOMICS OF OLIGOTOMA CEYLONICA CEYLONICA ENDERLEIN (OLIGOTOMIDAE, EMBIOPTERA), COMMENSAL IN THE NEST OF THE SOCIAL SPIDER STEGODYPIUS SARASINORUM KARSCH.  
B L Bradoo  
*Bombay Natur Hist Soc J* 64(3):447-454 REF  
Dec 1967 513 B63  
Araneida, Embioptera, Insect behavior, Insect biology, Insect nests, Oligotomidae, Symbiosis.
- 9979-69**  
WASPS ATTACKING OTHER INSECTS.  
F D Buck  
*S London Entomol Natur Hist Soc Proc Trans* 9(4):97  
Dec 1967 420 SO8  
Diptera, Hymenoptera, Predaceous insects.
- 9980-69**  
METEORUS VERSICOLOR WESM. VAR. DECOLORATUS RUTHE (HYM., BRACONIDAE), A NEW PARASITE OF THAUMETOPOEA PITYOCAMPA SCHIFF. (LEP., THAUMETOPOEIDAE). (FR)  
D Cadahia G Demolin E Biliotti  
*Entomophaga* 12(4):355-361 MAP REF  
1967 421 EN835  
Braconidae, Insect biology, Natural control (insects), Notodontidae, English abstract.
- 9981-69**  
LOCUST WIND RECEPTORS. I. TRANSDUCER MECHANICS AND SENSORY RESPONSE.  
J M Camhi  
*J Exp Biol* 50(2):335-348 REF  
Apr 1969 442.8 B77  
Aerodynamics, Electrophysiology, Insect flight, Insect physiology, Schistocerca gregaria, Sense organs, Wind.
- 9982-69**  
LOCUST WIND RECEPTORS. III. CONTRIBUTION TO FLIGHT INITIATION AND LIFT CONTROL.  
J M Camhi  
*J Exp Biol* 50(2):363-373  
Apr 1969 442.8 B77  
Aerodynamics, Insect flight, Insect physiology, Schistocerca gregaria, Sense organs.
- 9983-69**  
LOCUST WIND RECEPTORS. II. INTERNEURONES IN THE CERVICAL CONNECTIVE.  
J M Camhi  
*J Exp Biol* 50(2):349-362  
Apr 1969 442.8 B77  
Electrophysiology, Insect flight, Insect physiology, Nervous system, Schistocerca gregaria, Sense organs, Wind.
- 9984-69**  
THE UTILIZATION OF C14-LABELLED ADENOSINE DIPHOSPHATE DURING THE IN VITRO RESPIRATION OF HOUSEFLY SAR-COSOMES.  
G C Carney  
*Life Sci* 8(10,PT 2):453-464 REF  
15 May 1969 442.8 L62  
Adenosine pyrophosphates, Insect biochemistry, Musca domestica, Radioactive tracers, Sar-cosomes, Tissue culture.
- 9985-69**  
AN INTERESTING CASE OF ADAPTATION TO VARIOUS HOSTS ON THE PART OF AN EGG PARASITE. (IT)  
B Cavaleaselle  
*Entomophaga* 13(4):319-322  
1968 421 EN835  
Aphelinidae, Centrodora italica, Cerambycidae, Eggs, Insect adaptation, Natural control (insects), Populus, Predaceous insects, Saperda carcharias. English abstract.
- 9986-69**  
POLLENS COLLECTED BY SPECIES OF ANDRENA (HYMENOPTERA: APIDAE).  
V H Chambers  
*Roy Entomol Soc London Proc Ser A Gen Entomol* 43(10-12):155-160  
31 Dec 1968 420 L84PA  
Andrena, Palynology, Surveys.
- 9987-69**  
THE EXTERNAL MORPHOGENESIS OF GRASSHOPPER EMBRYOS.  
R F Chapman F Whitham  
*Roy Entomol Soc London Proc Ser A Gen Entomol* 43(10-12):161-169 REF  
31 Dec 1968 420 L84PA  
Acrididae, Embryology, Insect eggs, Insect physiology, Temperature.
- 9988-69**  
REARING OF THE MAIZE STEM BORER, CHILO ZONELLUS SWINHOE ON ARTIFICIAL DIET.  
S M Chatterji K H Siddiqui V P S Panwar G C Sharma W R Young  
*Indian J Entomol* 30(1):8-12  
Mar 1968 420 IN23  
Chilo zonellus, Insect nutrition, Insect rearing.
- 9989-69**  
ON THE ODOUR COMPONENTS OF THE STINK OF TWO HETEROPTERAN BUGS OF INDIA.  
D K Choudhuri K K Das  
*Indian J Entomol* 30(3):203-208 REF  
Sep 1968 420 IN23  
Insect biochemistry, Leptocoris varicornis, Pentatomidae, Secretion.
- 9990-69**  
A COMPARATIVE BIOLOGICAL STUDY OF THREE CEROPLASTES SPECIES (HEM. COCCIDEAE) AND THEIR NATURAL ENEMIES.  
C J Cilliers  
*S Afr Dep Agr Tech Serv Entomol Mem* 13:1-59 REF  
Aug 1967 423.92 SO8  
Ceroplastes, Eublemma, Parasitism, Tetrastichus.
- 9991-69**  
THE NEUTRAL LIPIDS FROM VARIOUS ORGANS OF THE TERMITE MACROTERMES GOLIATH.  
S H W Cmelik  
*J Insect Physiol* 15(5):839-849 REF  
May 1969 421 J825  
Chromatography, Insect biochemistry, Lipids, Termites.
- 9992-69**  
CORN STUNT VECTOR LEAFHOPPER ATTRACTANCY TO AND OVIPOSITION PREFERENCE FOR HYBRID DENT CORN. II. GRAMINELLA NIGRIFRONS.  
H L Collins H N Pitre  
*Entomol Soc Amer Ann* 62(4):773-775 REF  
Jul 1969 420 EN82  
Corn, Crop varieties, Graminella nigrifrons, Oviposition, Plant disease resistance, Stunt, Virus diseases (plants).  
On the basis of leafhopper counts and rate of egg deposition corn stunt susceptible hybrids in general were not preferred over hybrids exhibiting resistance when the leafhoppers were given a choice of hybrids in a field cage. Further, no significant differences in egg laying were obtained when females were continued on individual hybrids and not given a choice of oviposition sites.
- 9993-69**  
BIOCHEMICAL STUDY OF PLODIA INTER-PUNCTELLA (HBN.) (LEPIDOPTERA) I- VARIATIONS OF BODY WEIGHT, WATER CONTENT, AND DRY MATTER CONTENT. (FR)  
G Couture L Huot  
*Natur Can* 94(4JUL-AUG):437-446 REF  
Aug 1967 410 N216

Development, Insect physiology, Larvae, Plodia interpunctella, Water. English abstract.

9994-69

VARIATIONS IN FREE AMINO ACIDS IN THE LARVAE AND PUPAE OF CHILO ZONELLUS.

K Dang K L Doharey

*Indian J Entomol* 30(3):246-247

Sep 1968 420 IN23

Amino acids, Chemical analysis, Chilo zonellus, Insect biochemistry, Larvae, Pupae.

9995-69

THE INFLUENCE OF THE REARING TEMPERATURE ON LARVAL AND PUPAL MORTALITY AND THE DURATION OF DEVELOPMENT OF DROSOPHILA. (FR)

J David M F Clavel

*Natur Can* 94(2,MAR-APR):209-219 REF

Apr 1967 410 N216

Drosophila, Insect physiology, Insect rearing, Larvae, Mortality, Pupae, Temperature. English abstract.

9996-69

THE EPHIPPIGERINAE (ORTHOPTERA, TETIGONIIDAE) OCCASIONAL BUT IMPORTANT PREDATORS OF THAUMETOPOEA PITYOCAMPA SCHIFF. (FR)

G Demolin J C Delmas

*Entomophaga* 12(4):399-401

1967 421 EN835

Natural control (insects), Predaceous insects, Tetigoniidae, Thaumetopoeid caterpillar. English abstract.

9997-69

ACTION OF HONEY BEE VENOM ON DEVELOPMENT OF EPITHELIAL CELLULAR CULTURES OF MONKEY'S KIDNEYS. (FR)

A Derevici V Dima

*Paris Soc Biol Compt Rend* 160(7):1378-1382

14 Jan 1967 442.9 P21

Bee venom, Cytopathology, Development, Kidneys, Monkeys, Tissue culture, Toxicology.

9998-69

A NOTE ON THE OCCURRENCE OF FRUIT FLY MAGGOTS OF DACUS CUCURBITAE COQ. IN CECIDOMYIID GALLS OF COCCINIA INDICA IN ANDHRA PRADESH.

E Dharmaraju

*Indian J Entomol* 30(1):87

Mar 1968 420 IN23

Cecidomyiidae, Dacus cucurbitae, Insect biology, Plant galls.

9999-69

EFFECT OF TEMPERATURE ON WATER ABSORPTION, DEVELOPMENT, AND HATCHING IN EGGS OF THE PRAIRIE GRAIN WIREWORM, CTENICERA DESTRUCTOR.

J F Doane

*Entomol Soc Amer Ann* 63(3):567-572

May 1969 420 EN82

Absorption, Ctenicera acripennis destructor, Insect eggs, Insect physiology, Temperature, Water.

10000-69

ELM SPANWORM EYE SIZE DEPENDS UPON SEX AND DIET.

A T Drooz

*Entomol Soc Amer Ann* 63(3):561-562

May 1969 420 EN82

Ennomos subsignarius, Eyes, Insect morphology, Insect nutrition.

The eyes of the Ennomos subsignarius (Hubner) are larger in length, width, and depth than those of the female. When larvae were reared on pignut hickory, Carya glabra (Mill.) Sweet, the eyes of those were larger than those of spanworms reared on a diet of northern red oak, Quercus rubra L. Foliage condition also generally affected eye size. Greater measurements accrued to those fed juvenile (tender) foliage throughout their larval life than to those fed normal foliage.

10001-69

THE LIFE HISTORIES AND DRIFTING OF THE PLECOPTERA AND EPHEMEROPTERA IN A DARTMOOR STREAM.

J M Elliott

*J Anim Ecol* 36(2):343-362 REF

Jun 1967 410 J826

Aquatic insects, Ephemeroptera, Insect biology, Insect traps, Plecoptera.

10002-69

FEMALE SPECIFIC PROTEIN: BIOSYNTHESIS CONTROLLED BY CORPUS ALLATUM IN LEUCOPHAEA MADERAE.

F Engelmann

*Science* 165(3891):407-409 REF

25 Jul 1969 470 SC12

Corpora allata, Electrophoresis, Hormones, Leucophaea maderae, Oogenesis, Proteins.

10003-69

SPERMATOCYTE GRANULES IN DROSOPHILA MELANOGASTER.

J Erickson A B Acton

*Can J Genet Cytol* 11(1):1530168 REF

Mar 1969 443.8 C16

Drosophila melanogaster, Electron microscopy, Insect diseases, Insect genetics, Insect histology, Rickettsia, Spermatocytes.

10004-69

COLONIZATION OF AN ISLAND BY THE BUFFALO FLY, HAEMATOBIA EXIGUA.

P Ferrar

*Australian Vet J* 45(6):290-292 MAP

Jun 1969 41.8 AU72

Haematobia, Insect dissemination, Insect outbreaks, Population.

10005-69

THE INFLUENCE OF ECOLOGICAL AND GENETIC FACTORS ON THE BIRTH AND DEATH OF MACROCHELES ROBUSTULUS (BERLESE, 1904). (IT)

A Filippini B Mosna

*Ist Super Sanit Ann* 4(5-6):551-571 REF

1968 R65.18

Insect ecology, Insect genetics, Longevity, Macrocheles, Mortality, Parasitic insects, Population, Temperature.

10006-69

DEVIATE-ONTOGENIES IN THE APHELINID MALE (HYMENOPTERA) ASSOCIATED WITH THE OVIPOSITIONAL BEHAVIOR OF THE PARENTAL FEMALE.

S E Flanders

*Entomophaga* 12(5):415-427 REF

1967 421 EN835

Aphelinidae, Insect behavior, Insect biology, Insect ecology, Insect physiology, Oviposition, Reproduction.

10007-69

ABUNDANCE OF COTTONTAILS AND THEIR FLEAS AT RED BLUFF RANCH, NEW MEXICO.

D I. Forcom C D Rael J R Wheeler B E Miller

*J Wildlife Manage* 33(2):422-424

Apr 1969 410 J827

Hoplopyllus, Rabbits, Siphonaptera, Surveys.

10008-69

RECENT RECORDS OF MIGRANT LEPIDOPTERA IN TARANAKI.

K J Fox

*New Zval Entomol* 4(2):6-10

Apr 1969 421 N48

Insect identification, Insect migration, Lepidoptera, Surveys.

10009-69

THE INSECT PREDATORS OF THE PUPAL STAGE OF THE WINTER MOTH, OPEROPHTERA BRUMATA (L.) (LEPIDOPTERA: HYDRIOMENIDAE).

J H Frank

*J Anim Ecol* 36(2):375-389

Jun 1967 410 J826

Carabidae, Operophtera brumata, Population, Predaceous insects, Pupae, Radioactive tracers, Staphylinidae.

10010-69

THE EFFECT OF PUPAL PREDATORS ON A POPULATION OF WINTER MOTH, OPEROPHTERA BRUMATA (L.) (HYDRIOMENIDAE).

J H Frank

*J Anim Ecol* 36(3):611-621

Oct 1967 410 J826

Carabidae, Elateridae, Mammals, Mortality, Operophtera brumata, Population, Predaceous insects, Pupae, Staphylinidae.

10011-69

STUDIES ON THE ECOLOGY OF LARVAL TIPULINAE (DIPTERA, TIPULIDAE).

B E Freeman

*J Anim Ecol* 36(1):123-146 MAP REF

Feb 1967 410 J826

Insect ecology, Larvae, Surveys, Tipulidae.

10012-69

FINE STRUCTURES OF MEROZOITES OF BABESIA BIGEMINA IN THE OVARIES OF BOOPHILUS MICROPLUS AND BOOPHILUS DECOLORATUS. (GE)

K Friedhoff E Scholtyssek

*Z Parasitenk* 32(3):266-283 REF

16 Jun 1969 442.8 Z33F

Babesia bigemina, Boophilus decoloratus, Boophilus microplus, Cytology, Electron microscopy, Insect diseases, Ovaries. English abstract.

10013-69

MICROSCOPICAL STUDIES ON THE DEVELOPMENT OF BABESIA OVIS IN RHIPICEPHALUS BURSA (IXODOIDEA). I. DEVELOPMENT IN FEMALE TICKS AFTER REPLETION. (GE)

K Friedhoff

*Z Parasitenk* 32(3):191-219 REF

16 Jun 1969 442.8 Z33F

Babesia ovis, Insect diseases, Insect histology, Insect vectors, Microscopy, Rhipicephalus bursa. English abstract.

10014-69

PHYSICO-ORGANIC CHEMICAL APPROACH TO THE MODE OF ACTION OF ORGANOPHOSPHORUS INSECTICIDES.

T R Fukuto

*Residue Rev* 25:327-340 REF

1969 389.9 R314

Animal physiology, Cholinesterases, Insect biochemistry, Insect physiology, Organophosphorus compounds, Toxicology.

10015-69

MORPHOLOGY AND BIOLOGY OF A NEST-PRODUCING MITE, BAKERICHEYLIA CHANAYI (ACARINA: CHEYLETIDAE).

D P Furman O E Sousa

*Entomol Soc Amer Ann* 62(4):858-863

Jul 1969 420 EN82

Cheyletidae, Insect biology, Insect morphology, Insect nests, Parasitic insects.

10016-69

THE BEHAVIOR OF NEWLY EMERGED BOLL WEEVILS.

F R Gilliland C E McCoy

*Entomol Soc Amer Ann* 63(3):602-605

May 1969 420 EN82

Anthonomus grandis, Feeding, Insect behavior, Insect physiology.

10017-69

ECOLOGICAL RESEARCH IN THE LAMTO SAVANNAH (IVORY COAST): ANNUAL CYCLE OF THE POPULATION SIZE AND BIOMASSES OF ARTHROPODS IN R-BACEOUS STRATUM. (FR)

Y Gillon D Gillon

*Terre Vie* (3,JUL-SEP):262-277

Sep 1967 410.9 P21



Insect ecology, Phytophagous insects, Population. English abstract.

10018-69

**HISTOLOGICAL, BEHAVIORAL, AND SYMPTOMATIC EFFECTS OF PENTAC ON TETRANYCHUS URTICAE.**

J B Gingrich H T Streu

*Entomol Soc Amer Ann* 63(3):640-647 REF

May 1969 420 EN82

Acaricides, Insect behavior, Insect histology, Pentac, Tetranychus urticae.

10019-69

**STUDY OF DENSONUCLEOSIS OF LEPIDOPTERA BY THE IMMUNOLOGICAL GEL DIFFUSION METHOD. (FR)**

F Giran

*Entomophaga* 13(4):271-279 REF

1968 421 EN835

Galleria mellonella, Insect diseases, Serodiagnosis. English abstract.

10020-69

**EXPERIMENTAL INFECTIONS WITH BACILLUS LARVAE. I. A STRAIN WITH A MORPHOLOGICAL MARKER.**

T A Gochnaur J C M L'Arrivee

*J Invertebrate Pathol* 13(2):280-284 REF

Mar 1969 421 J826

Apis mellifera, Bacillus larvae, Flagella, Indicators (disease), Insect diseases, Morphology.

A marker strain of Bacillus larvae, isolated from naturally infected honey-bee larval remains, produced microscopically visible flagellar whips half the normal wavelength of whips of other strains, both in artificial culture and in inoculated honey-bee larvae. The strain thus may serve as a specific indicator of the presence and purity of infections in test larvae.

10021-69

**COMPOSITIONS AND METHODS FOR REGULATING THE GROWTH OF PLANTS. PATENT 3,455,673.**

H F Goonewardene B Loew

*Us Patent Office Offic Gaz* 864(3):903

15 Jul 1969 156.65 OF2

Carbamates, Patents, Plant regulators.

10022-69

**ANTENNOPSIS GALLICA HEIM AND BUCHLI (HYPHOMYCETES: GLOEOHAUSTORIALES), AN ENTOMOGENOUS FUNGUS ON SUBTERRANEAN TERMITES IN FLORIDA.**

R J Gouger J W Kimbrough

*J Invertebrate Pathol* 13(2):223-228 REF

Mar 1969 421 J826

Entomogenous fungi, Insect diseases, Microbiology, Reticulitermes flavipes, Termites.

Antennopsis gallica Heim and Buchli is reported for the first time in North America on the subterranean termites Reticulitermes virginicus Banks and Reticulitermes flavipes (Kollar) from north Florida. Details of the life cycle of this entomogenous fungus are described and illustrated.

10023-69

**DIOXANE AND DIOXASPIRO DERIVATIVES AS ATTRACTANTS FOR MALE YELLOW-FEVER MOSQUITOES.**

G G Grant

*J Econ Entomol* 62(4):786-789

15 Aug 1969 421 J822

Aedes aegypti, Attractants, Dioxane compounds, Dioxaspiro compounds, Organic compounds, Volatile substances.

10024-69

**SPERMATOPHORES OF THE BLATTARIA.**

P N Graves

*Entomol Soc Amer Ann* 63(3):595-602

May 1969 420 EN82

Blattaria, Insect evolution, Insect physiology, Reproduction, Spermatophores.

10025-69

**HEXALURE, AN INSECT SEX ATTRACTANT DISCOVERED BY EMPIRICAL SCREENING.**

N Green M Jacobson J C Keller

*Experientia* 25(7):682-683

15 Jul 1967 475 EX7

Attractants, Chemicals, Insect behavior, Methodology, Pectinophora gossypiella.

10026-69

**DEVELOPMENT OF CHROTOGONUS TRACHYPTERUS (BLANCH.) (ORTHOPTERA: PYRSGOMORPHIDAE) IN RELATION TO DIFFERENT LEVELS OF TEMPERATURE AND HUMIDITY.**

G S Grewal A S Atwal

*Indian J Entomol* 30(1):1-7

Mar 1968 420 IN23

Acrididae, Humidity, Insect physiology, Oviposition, Temperature.

10027-69

**A STUDY OF A POCKET OF SCATTERED DESERT LOCUST POPULATION IN RAJASTHAN, INDIA DURING 1966 WITH SPECIAL REFERENCE TO EYE-STRIPES AND BIOMETRICS.**

S C Harjai A J Dhillon M V Venkatesh

*Indian J Entomol* 30(2):137-153 REF

Jun 1968 420 IN23

Habitats, Insect morphology, Population, Schistocerca gregaria.

10028-69

**THE INFLUENCE OF TEMPERATURE ON REPRODUCTION AND DEVELOPMENT IN FOUR SPECIES OF GLOSSINA (DIPTERA: MUSCIDA).**

J M B Harley

*Roy Entomol Soc London Proc Ser A Gen Entomol*

43(10-12):170-177 REF

31 Dec 1968 420 L84PA

Glossina, Insect physiology, Ovulation, Pupae, Temperature.

10029-69

**COURSE OF SPORULATION OF BACILLUS POPILLIAE IN LIQUID MEDIUM CONTAINING ACTIVATED CARBON.**

W C Haynes L J Rhodes

*J Invertebrate Pathol* 13(2):161-166

Mar 1969 421 J826

Bacillus popilliae, Bacterial diseases (insects), Culture media, Insect diseases, Popillia japonica.

10030-69

**LABORATORY DEMONSTRATION OF A CHEMICAL SEX ATTRACTANT IN COSTELYTURA ZEALANDICH (WHITE) (SCARABAEIDAE: COLEOPTERA).**

R F Henzell M D Lowe H J Taylor E Boston

*New Zealand J Sci* 12(2):252-257

Jun 1969 514 N482

Costelytra zealandica, Insect behavior, Insect physiology, Scarabaeidae, Sex attractants.

10031-69

**THE TOXICITY TO TRIBOLIUM CASTANEUM (HERBST) (COLEOPTERA, TENEBRIONIDAE) OF MIXTURES OF PYRETHRINS AND PIPERONYL BUTOXIDE: FITTING A MATHEMATICAL MODEL.**

P S Hewlett

*J Stored Prod Res* 5(1):1-9 REF

May 1969 421 J829

Mathematical analysis, Models, Piperonyl butoxide, Pyrethrum, Toxicology, Tribolium castaneum.

10032-69

**MEDITERRANEAN FRUIT FLIES AND MELON FLIES TRAPPED AT VARIOUS HEIGHTS WITH SYNTHETIC LURES.**

F R Holbrook M S Fujimoto

*J Econ Entomol* 62(4):962-963

15 Aug 1969 421 J822

Attractants, Ceratitis capitata, Chlordane, Chlorinated hydrocarbons, Cuc-lure, Dacus cucurbitae, Fruit, Insect traps, Lindane, Naled, Organophosphorus compounds, Trimedlure, Vegetables. Traps placed from 1 to 15 feet above ground in fruit and truck crop area.

10033-69

**STUDIES AND SUGGESTIONS ON THE BEHAVIOUR OF MOTHS AT LIGHT.**

J D Holloway

*S London Entomol Natur Hist Soc Proc Trans*

7(6,PT 2):31-45 REF

May 1967 420 S08

Aging, Insect behavior, Insect migration, Light, Moths, Population.

10034-69

**IN VITRO COLONIZATION OF THE GOAT BITING LICE, BOVICOLA CRASSIPES AND B. LIMBATA.**

D E Hopkins W F Chamberlain

*Entomol Soc Amer Ann* 62(4):826-828

Jul 1969 420 EN82

Bovicola, Insect biology, Insect nutrition, Insect rearing, Mallophaga.

10035-69

**TEMPERATURE EFFECTS ON EMBRYONIC DEVELOPMENT IN INSECTS.**

R W Howe

*Annu Rev Entomol* 12:15-42 REF

1967 421 AN72

Bibliography, Insect eggs, Insect morphology, Insect physiology, Reviews, Temperature.

10036-69

**LETHARGY, A NEW VIRUS OF MELOLONTHA MELOLONTHA L. LARVAE (COLEOPTERA, SCARABAEIDAE). (FR)**

B Hurpin C Vago P Robert G Meynadier

*Entomophaga* 12(3):311-315

1967 421 EN835

Insect diseases, Larvae, Melolontha melolontha, Viruses. English abstract.

10037-69

**METEOROLOGICAL ASPECTS OF INSECT MIGRATIONS.**

G W Hurst

*Endeavour* 28(104):77-81 REF

May 1969 472 EN2

Insect migration, Myzus persicae, Phytomicta biloba, Schistocerca gregaria, Spodoptera exigua.

10038-69

**MYXOMYCETES AS FOOD FOR OTHER ORGANISMS.**

B Ing

*S London Entomol Natur Hist Soc Proc Trans*

7(6,PT 1):18-23 REF

Mar 1967 420 S08

Insect nutrition, Myxomycetes.

10039-69

**DESCRIPTION, BIOLOGY, AND IMPORTANCE OF A NEW SPECIES OF ALLANTONEMATIDAE (NEMATODA), PARASITE OF THE APHIDIPHAGOUS COCCINELLIDAE: PARASYLENCHUS COCCINELLINAE, N. SP. (FR)**

G Iperiti D. van Waerebeke

*Entomophaga* 13(2):107-119 REF

1968 421 EN835

Allantonematidae, Biology, Coccinellidae, Nematodes, Physiology, Taxonomy. English abstract.

10040-69

**LABORATORY STUDIES OF EUCELATORIA ARMIGERA, A TACHINID PARASITE OF HELIOTHIS SPP.**

C G Jackson D E Bryan R Patana

*J Econ Entomol* 62(4):907-909 REF

15 Aug 1969 421 J822

Eucelatoria armigera, Heliiothis, Insect biology, Insect rearing, Parasitic insects, Tachinidae, Temperature, Zoogeography. Hawaiian records erroneous.

10041-69

**LEACHING OF THE NUCLEAR-POLYHEDROSIS VIRUS OF TRICHOPLUSIA NI FROM SOIL.**

R P Jaques

*J Invertebrate Pathol* 13(2):256-263

Mar 1969 421 J826

## ENTOMOLOGY

10042-69

Insect diseases, Nuclear polyhedrosis virus, Soil leaching, Trichoplusia ni.

10042-69

THE ULTRASTRUCTURE OF THE BRAIN OF THE INSECT NOTONECTA GLAUCA L.

H Jarnicka-Stanios

*Zool Pol* 19(1):133-142 REF

1969 410 Z712

Brain, Insect morphology, Notonecta.

10043-69

STUDIES ON THE SUSCEPTIBILITY OF DIFFERENT STAGES OF BAGRADA CRUCIFERARUM KIRKALDY TO SOME ORGANIC INSECTICIDES.

H C Joshi C L Kaul

*Indian J Entomol* 30(2):180-181

Jun 1968 420 IN23

Benzene hexachloride, Carbamates, Carbaryl, Chlorinated hydrocarbons, Dichlorvos, Endrin, Insect physiology, Insecticides, Organic compounds, Organophosphorus compounds, Parathion, Pentatomidae, Trichlorfon.

10044-69

A SIMPLE STARCH-GEL ELECTROPHORETIC METHOD TO INVESTIGATE ESTERASE INHIBITION BY COMMON ORGANIC INSECTICIDES.

A M Kadoum

*Bull Environ Contamination Toxicol* 4(2,MAR-APR):80-87

Apr 1969 RA1270.P35A1

Blood proteins, Electrophoresis, Esterases, Inhibitors, Insect biochemistry, Organophosphorus compounds, Tenebrio molitor.

10045-69

BIOLOGY OF APANTELES CHILONIS AND A. FLAVIPES (HYMENOPTERA: BRACONIDAE), PARASITES OF CHILO SUPPRESSALIS.

H Kajita E F Drake

*Mushi* 42(14):163-179 REF

31 Mar 1969 421 M97

Apanteles chilonis, Apanteles flavipes, Biological control (insects), Chilo suppressalis, Insect biology, Insect rearing.

10046-69

A NEW PYRALID LEAF ROLLER, PHOSTRIA SP. ON SUGARCANE.

A N Kalra H David D K Banerji

*Indian J Entomol* 30(2):182

Jun 1968 420 IN23

Insect outbreaks, Pyralidae, Sugarcane.

10047-69

BIOLOGY OF THE BILLBUG SPHENOPHORUS VENATUS CONFLUENS, A NEW PEST OF ORCHARDGRASS.

J A Kamm

*J Econ Entomol* 62(4):808-812

15 Aug 1969 421 J822

Crop yields, Dactylis glomerata, Grasses, Insect behavior, Insect biology, Insect eggs, Insect nutrition, Insect pests, Larvae, Ovulation, Pupae, Sex behavior, Spheophorus venatus confluens.

10048-69

ESTIMATION AND DISSIPATION OF PARATHION RESIDUE FROM THE CROP OF INDIAN RAPE SEED.

V. S. Kavadia R. Lal

*Indian J Entomol* 30(2):113-118 REF

Jun 1968 420 IN23

Biological assay, Bird rape, Drosophila melanogaster, Insecticide residues, Insecticides, Organophosphorus compounds, Parathion.

10049-69

LIFE HISTORY AND DAMAGE OF THE PINE ROOT TIP WEEVIL, HYLOBIUS RHIZOPHAGUS, IN WISCONSIN.

W H Kearby D M Benjamin

*Entomol Soc Amer Ann* 62(4):838-843 MAP

Jul 1969 420 EN82

## BIBLIOGRAPHY

Hylobius rhizophagus, Insect biology, Life cycle, Pinus, Plant injuries.

10050-69

SPACED-OUT GREGARIOUSNESS IN SYCAMORE APHIDS DREPANOSIPHUM PLATANOIDES (SCHRANK) (HEMIPTERA, CALLAPHIDIDAE).

J S Kennedy L. Crawley

*J Anim Ecol* 36(1):147-170 REF

Feb 1967 410 J826

Acer pseudoplatanus, Callaphididae, Insect behavior, Population. With a statistical appendix.

10051-69

EXPERIMENTAL STUDIES ON DIAPAUSE IN STONEFLIES. III. EGGS OF BRACHYPTERA RISI (MORTON).

S G Khoo

*Roy Entomol Soc London Proc Ser A Gen Entomol* 43(10-12):141-146

31 Dec 1968 420 L84PA

Environmental effects, Insect eggs, Insect physiology, Plecoptera, Temperature.

10052-69

FORAGING GALLERIES OF THE FORMOSAN SUBTERRANEAN TERMITE, COPTOTERMES FORMOSANUS, IN LOUISIANA.

E G King W T Spink

*Entomol Soc Amer Ann* 63(3):536-542

May 1969 420 EN82

Coptotermes formosanus, Insect nests, Termites, Trees.

10053-69

WATER VAPOR SORPTION AND HUMIDITY RELATIONSHIPS IN LIPOSCELIS (INSECTA: PSOCOPTERA).

W Knulle R R Spadafora

*J Stored Prod Res* 5(1):49-55 REF

May 1969 421 J829

Humidity, Insect physiology, Liposcelidae, Sorption, Water.

10054-69

BIOLOGY OF AGROTHEREUTES TUNETHNUS HABER. (HYM., ICHNEUMONIDAE) AN ECTOPARASITE OF ORGYIA DUBIA TAUSCH. (LEP., LYMANTRIIDAE).

J Kugler Z. Wollberg

*Entomophaga* 12(4):363-379 REF

1967 421 EN835

Ichneumonidae, Insect behavior, Insect biology, Lymantriidae.

10055-69

A MORE RECENT SENSILLARY TYPE ON THE ANTENNA OF FEMALE MOSQUITOES (AEDES AEGYPTI L.). (GE)

V Lacher

*Experientia* 25(7):768-769

15 Jul 1969 475 EX7

Aedes aegypti, Antennae, Insect morphology, Sense organs.

10056-69

MIGRATING BUTTERFLIES IN 1967 (TWENTIETH ANNUAL REPORT). (DU)

B J Lempe

*Entomol Ber* 29(1):7-17

01 Jan 1969 420 N38B

Insect migration, Lepidoptera, Surveys. English abstract.

10057-69

PROTEINS IN THE SPERMATHECAE AND HAEMOLYMPH OF THE QUEEN BEE (APIS MELLIFICA L. VAR. LIGUSTICA SPIN.).

Y Lensky E Almut

*Compar Biochem Physiol* 30(3):569-575 REF

01 Aug 1969 444.8 C73

Apis mellifica, Chemical analysis, Hemolymph, Insect biochemistry, Proteins, Queen bees, Spermatheca.

10058-69

BIOLOGICAL INTERACTION BETWEEN PLASTICIZERS AND INSECTICIDES.

E P Lichtenstein K R Schulz T W Fuhremann T T Liang

*J Econ Entomol* 62(4):761-765 REF

15 Aug 1969 421 J822

Biological assay, Biphenyl compounds, Chlorinated hydrocarbons, Chromatography, Dieldrin, DDT, Drosophila melanogaster, Insecticides, Musca domestica, Synergism.

10059-69

INSECT PARASITES OF THE GREEN PEACH APHID, MYZUS PERSICAE SULZ. AND THEIR CONTROL POTENTIAL.

M Mackauer

*Entomophaga* 13(2):91-106 REF

1968 421 EN835

Biological control (insects), Insect biology, Myzus persicae, Predaceous insects, Zoogeography.

10060-69

AQUATIC INSECT COMMUNITIES OF A SMALL STREAM ON MONT ST. HILAIRE, QUEBEC.

R J Maekay

*Can Fish Res Board J* 26(5):1157-1183 MAP REF

May 1969 442.9 C16J

Aquatic insects, Insect ecology, Streams, Surveys.

10061-69

LABORATORY AND FIELD EXPERIMENTS ON THE EFFECTIVENESS OF PURIFIED AND NON-PURIFIED NUCLEAR POLYHEDRAL VIRUS OF LYMANTRIA DISPAR L..

A Magnoler

*Entomophaga* 13(4):335-344 REF

1968 421 EN835

Biological control (insects), Insect diseases, Nuclear polyhedrosis virus, Porthetria dispar.

10062-69

THE ECOLOGY OF THE SIMULIIDAE IN A SCOTTISH RIVER.

P S Maitland M M Penney

*J Anim Ecol* 36(1):179-206 REF

Feb 1967 410 J826

Insect behavior, Insect ecology, Insect nutrition, Population, Simuliidae.

10063-69

HYDROGEN-ION CONCENTRATION AND THE DIGESTIVE ENZYMES IN CLETUS SIGNATUS WALKER (HETEROPTERA: COREIDAE).

S B Mall A N Chatteraj

*Indian J Entomol* 30(2):154-162 REF

Jun 1968 420 IN23

Coreidae, Enzymes, Gastrointestinal system, Hydrogen-ion concentration, Insect biochemistry.

10064-69

MORPHOLOGY OF THE NERVOUS SYSTEM OF ADULT PRODENIA LITURA.

L M L Mathur

*Entomol Soc Amer Ann* 63(3):525-529 REF

May 1969 420 EN82

Insect morphology, Nervous system, Prodenia litura.

10065-69

INFLUENCE OF PESTICIDES AND FERTILIZERS ON THE BEHAVIOUR OF PHYTOPHAGOUS MITES IN ORCHARDS AND UNDER LABORATORY CONDITIONS.

G Mathys M Baggiolini J Stahl

*Entomophaga* 13(4):357-372 REF

1968 421 EN835

Fertilizers, Insect behavior, Orchards, Pesticides, Phytophagous mites.

10066-69

SUBSTRATE PREFERENCES AND INVASION BEHAVIOUR EXHIBITED BY LARVAE OF NILODORUM BREVIUCCA FREEMAN (CHIRONOMIDAE) UNDER EXPERIMENTAL CONDITIONS.



- A J McIlachlan  
*Hydrobiologia* 33(2):237-249  
29 May 1969 410 H992  
Chironomidae, Food habits, Insect behavior, Insect rearing, Larvae, Substrates.
- 10067-69**  
**EYES OF THE FEMALE TWO-SPOTTED SPIDER MITE, TETRANYCHUS URTICAE. I. MORPHOLOGY.**  
W D McEnroe  
*Entomol Soc Amer Ann* 62(3):461-466 REF  
May 1969 420 EN82  
Eyes, Insect morphology, Tetranychus urticae.  
The anterior eyes of the female Tetranychus urticae (Koch) on the basis of their structure, can serve as scanning-point detectors. The posterior eyes are not shielded and appear to be non-directional receptors.
- 10068-69**  
**DEVELOPMENT OF THE BAIT PRINCIPLE FOR BOLL WEEVIL CONTROL. IV. FIELD TESTS WITH A BAIT CONTAINING A FEEDING STIMULANT AND THE SPOOROZOANS GLUGEA GASTI AND MATTESIA GRANDIS.**  
R E McLaughlin T C Cleveland R J Daum M R Bell  
*J Invertebrate Pathol* 13(3):429-441  
May 1969 421 J826  
Anthonomus grandis, Baits, Biological control (insects), Field studies, Glugea gasti, Insect diseases, Mattesia grandis, Microsporidia.
- 10069-69**  
**RADIATION SENSITIVITY OF TWELVE SPECIES OF ARTHROPODS.**  
E F Menhinick D A Crossley  
*Entomol Soc Amer Ann* 62(4):711-717 REF  
Jul 1969 420 EN82  
Arthropoda, Blatta orientalis, Blattella germanica, Gamma rays, Insect physiology, Periplaneta americana, Radiation, Tenebrio molitor.
- 10070-69**  
**ERETMO CERUS CORNI HALD. (HYM., APHELINIDAE), A PARASITE OF SIPHONINUS PHILLYREAE HALID. (HOM., ALEYRODIDAE). (IT)**  
I Mentzelos  
*Entomophaga* 12(4):351-353  
1967 421 EN835  
Aleyrodidae, Aphelinidae, Predaceous insects, Zoogeography, English abstract.
- 10071-69**  
**AGE-DISTRIBUTION AND ABUNDANCE IN POPULATIONS OF FLOUR BEETLES. I. EXPERIMENTAL STUDIES.**  
D B Mertz  
*Ecol Monogr* 39(1,WINTER):1-31 REF  
1969 410 EC72  
Aging, Insect biology, Insect ecology, Population, Tribolium castaneum.
- 10072-69**  
**FIELD OBSERVATIONS ON PERIODICITY AND SITE PREFERENCE IN OVIPOSITION BY AEDES AEGYPTI (L.) AND RELATED MOSQUITOES (DIPTERA: CULICIDAE) IN KENYA.**  
G A H McClelland  
*Roy Entomol Soc London Proc Ser A Gen Entomol* 43(10-12):147-154 REF  
31 Dec 1968 420 L84PA  
Aedes aegypti, Color, Insect behavior, Insect eggs, Oviposition.
- 10073-69**  
**STARVATION-INDUCED ACTIVITY IN COCKROACH MALPIGHIAN TUBULES.**  
J Meyers T Miller  
*Entomol Soc Amer Ann* 62(4):725-729  
Jul 1969 420 EN82  
Insect physiology, Malpighian tubes, Periplaneta americana, Starvation.
- 10074-69**  
**COCKROACH HEART RESPONSE TO RADIO-ACCELERATORS.**  
T Miller  
*Entomol Exp Appl* 12(1):53-61 REF  
1969 421 EN895  
Dorsal vessel, Electrophysiology, Nervous system, Periplaneta americana.
- 10075-69**  
**ANATOMICAL STUDIES OF THE OVIPOSITIONAL SITE OF PLANT HOPPERS AND LEAF HOPPERS ON RICE.**  
B C Misra P Israel  
*Indian J Entomol* 30(2):178  
Jun 1968 420 IN23  
Insect behavior, Nephrotettix, Nilaparvata lugens, Oviposition, Plant physiology, Rice.
- 10076-69**  
**A MODEL ACCOUNTING FOR SYMPATRY IN WATER MITES.**  
R Mitchell  
*Amer Natur* 103(932 JUL-AUG):331-346  
Aug 1969 470 AM36  
Insect adaptation, Insect ecology, Mites, Parasitic insects, Population.
- 10077-69**  
**IMMUNE REACTION IN INSECTS. I. LYSOZYME AS THE FUNDAMENTAL ANTIBACTERIAL FACTOR IN THE HUMORAL PREVENTIVE MECHANISM OF THE INSECTS. (GE)**  
W Mohrig B Messner  
*Biol Zentralbl* 87(4):439-470, REF  
Jul 1968 442.8 B523  
Bacteria, Bactericides, Blood, Enzymes, Experimental insects, Immunochemistry, Insect biochemistry, Muramidase, English and Russian summaries.
- 10078-69**  
**THE ABSORPTION OF P,P'-DDE BY LARVAE OF AGLAIS URTICAE (LEPIDOPTERA: NYMPHALIDAE).**  
F Moriarty  
*Entomol Exp Appl* 12(1) 81-84  
1969 421 EN895  
Chlorinated hydrocarbons, Cuticle, Dichloro-2,2-bis(p-chlorophenyl) ethylene, 1,1-, Hemolymph, Insecticides, Larvae, Nymphalidae.
- 10079-69**  
**WATER UPTAKE AND EMBRYONIC DEVELOPMENT IN EGGS OF CHORTHIPPUS BRUNNEUS THUNBERG (SALTATORIA: ACRIDIDAE).**  
F Moriarty  
*J Exp Biol* 50(2):327-333  
Apr 1969 442.8 B77  
Acrididae, Insect eggs, Insect physiology, Osmotic pressure, Water.
- 10080-69**  
**BIOLOGY AND DESCRIPTION OF IMMATURE STAGES OF ORTHACHETA HIIRTIPES, A PREDATOR OF CORDILURA SPP.**  
S E Neff J B Wallace  
*Entomol Soc Amer Ann* 62(4):785-790 REF  
Jul 1969 420 EN82  
Anthomyiidae, Insect behavior, Insect biology, Larvae, Predaceous insects, Pupae.
- 10081-69**  
**ENTOMOCOENOLOGICAL AND BIOLOGICAL STUDIES IN ROSA DAMASCENA MILL. PLANTATIONS. II. COLEOPTERA. (RUS)**  
V Nikolova  
*Bulgarska Akad Nauk Zool Inst Muz Izv* 26:152-155  
1968 410.9 B8721  
Coleoptera, Insect nutrition, Insect taxonomy, Population, Rosa. Article in English and Russian.
- 10082-69**  
**NUTRITION OF XYLEBORUS FERRUGINEUS. I. ETHANOL IN DIETS AS A TUNNELING (FEEDING) STIMULANT.**  
D M Norris J M Baker  
*Entomol Soc Amer Ann* 63(3):592-594  
May 1969 420 EN82  
Ethyl alcohol, Feeding, Insect behavior, Insect nutrition, Stimulants, Xyleborus ferrugineus.  
When ethanol was added to artificial diets, female (fungus-free) X. ferrugineus (F.) (Coleoptera: Scolytidae) tunneled farther than in the absence of ethanol. On 1 diet, the beetles reproduced only when ethanol was added to stimulate more tunneling (feeding). Ethanol also stimulated beetle tunneling in a diet that was nutritionally inadequate for development of a complete parthenogenetic generation of fungus-free X. ferrugineus.
- 10083-69**  
**VITELLOGENIC BLOOD PROTEIN SYNTHESIS BY INSECT FAT BODY.**  
M L Pan W J Bell W H Telfer  
*Science* 165(3891):393-394 REF  
25 Jul 1969 470 SC12  
Antibodies, Blood proteins, Fat body, Hyalophora cecropia, Oogenesis, Periplaneta americana, Radioactive tracers, Tissue culture.
- 10084-69**  
**EFFECT OF DIFFERENT FOOD PLANTS ON THE LARVAL AND POST-LARVAL DEVELOPMENT ON DIACRISIA OBLIQUA WALKER.**  
N D Pandey D R Yadava T P S Teotia  
*Indian J Entomol* 30(3):229-234  
Sep 1968 420 IN23  
Diacrisia obliqua, Food plants, Insect biology, Insect nutrition, Insect physiology, Larvae.
- 10085-69**  
**THE PREDATORY AND REPRODUCTIVE BEHAVIOUR OF RHINOCORIS BICOLOR AND R. TROPICUS (HEMIPTERA: REDUVIIDAE).**  
A H Parker  
*Entomol Exp Appl* 12(1):107-117  
1969 421 EN895  
Insect behavior, Insect rearing, Predaceous insects, Reduviidae, Reproduction, Sex behavior.
- 10086-69**  
**THE ARTIFICIAL FEEDING OF PHOSPHAMIDON TO MYZUS PERSICAE: II. THE EFFECTS OF PHOSPHAMIDON ON LIQUID UPTAKE THROUGH A PARAFILM MEMBRANE.**  
W H Parry J B Ford  
*Entomol Exp Appl* 12(1):1-18 REF  
1969 421 EN895  
Food habits, Insect behavior, Insect physiology, Myzus persicae, Phosphamidon, Toxicology.
- 10087-69**  
**NEW PARASITE RECORDS ON HYMENIA RECURVALIS (FABRICIUS) (LEPIDOPTERA: PYRALIDAE).**  
B Parshad R P Singh M I. Srivastava  
*Indian J Entomol* 30(3):248  
Sep 1968 420 IN23  
Braconidae, Hymenia recurvalis, Natural control (insects), Parasitic insects.
- 10088-69**  
**NEW RECORDS OF PARASITES OF PLUTELLA MACULIPENNIS CURT. IN GUJARAT, INDIA.**  
V C Patel H K Patel  
*Indian J Entomol* 30(1):86  
Mar 1968 420 IN23  
Parasitic insects, Plutella maculipennis, Surveys, Zoogeography.
- 10089-69**  
**COMMON INHIBITORY MOTORNEURONES IN INSECTS.**  
K G Pearson S J Bergman  
*J Exp Biol* 50(2):445-471 REF  
Apr 1969 442.8 B77

## ENTOMOLOGY

10090-69

Electrophysiology, Insect physiology, *Locusta migratoria*, Muscles, Nervous system, *Periplaneta americana*, *Schistocerca gregaria*.

10090-69

A KILLING AGENT FOR USE IN LIGHT TRAPS.

D C F Perrott

*New Zeal Entomol* 4(2):37-38

Apr 1969 421 N48

Cerambycidae, Dichlorvos, Insect collecting equipment, Light traps, Noctuidae.

10091-69

PUPARIAL DURATION IN GLOSSINA MOR-SITANS ORIENTALIS UNDER CONDITIONS OF CONSTANT TEMPERATURE.

R J Phelps P M Burrows

*Entomol Exp Appl* 12(1):33-43 REF

1969 421 EN895

Glossina morsitans, Metamorphosis, Pupae, Temperature.

10092-69

LETHAL TEMPERATURES FOR PUPARIA OF GLOSSINA MOR-SITANS ORIENTALIS.

R J Phelps P M Burrows

*Entomol Exp Appl* 12(1):23-32

1969 421 EN895

Glossina morsitans, Longevity, Pupae, Temperature.

10093-69

OENOCYTES: FORM AND FUNCTION.

B J R Philogene

*Entomol Soc Quebec Ann* 12(1):3-13 REF

Jan 1967 420 EN822

Cuticle, Insect physiology, Molting (insects), Secretion.

10094-69

DIPLOGASTERID NEMATODES (DIPLOGASTERIDAE: RHABDITIDA) AND THEIR RELATIONSHIP TO INSECT DISEASE.

G O Poinar

*J Invertebrate Pathol* 13(3):447-454 REF

May 1969 421 J826

Diplogasteridae, Galleria mellonella, Insect diseases, Mortality, Reviews, Rhaditis.

10095-69

A SIMPLE COLLECTOR FOR REMOVING SOIL INSECTS FROM AN OIL/WATER INTER-FACE.

R J B Power

*New Zeal Entomol* 4(2):3-5

Apr 1969 421 N48

Insect collecting equipment, Soil insects.

10096-69

INHERITANCE OF DDT-RESISTANCE IN MUSCA DOMESTICA NEBULD FABR.

S J Rahman N H Khan

*Indian J Entomol* 30(1):69-76

Mar 1968 420 IN23

Chlorinated hydrocarbons, DDT, Inheritance, Insect rearing, Insecticide resistant insects, Musca domestica, Organophosphorus compounds.

10097-69

NEW RECORD OF CIANLIOPS FALLAX SCOTT. (HEMIPTERA: LYGAEDAE) ON MOONG AND URID (PIIASEOLUS SPP.).

R R Rawat H R Sahu

*Indian J Entomol* 30(2):179

Jun 1968 420 IN23

Beans, Insect morphology, Insect outbreaks, Lygaeidae.

10098-69

STUDIES ON PHOSPHOHEXOSEISOMERASE (D-GLUCOSE-6-PHOSPHATE KETOL ISOMERASE) FROM THE INDIAN HONEYBEE, APIS INDICA FABRICIUS.

S Ray N C Pant K N Mehrotra

*Indian J Entomol* 30(1):37-44 REF

Mar 1968 420 IN23

Apis indica, Enzymes, Insect biochemistry, Insect physiology, Isomerases.

## BIBLIOGRAPHY

10099-69

METHIOD FOR REPELLING BEES. PATENT 3,456,056.

J J Reich F P Reich

*Us Patent Office Offic Gaz* 864(3):968

15 Jul 1969 156.65 OF2

Acids, Bees, Insect repellents, Organic compounds, Patents.

10100-69

DAMAGE TO TESTES AND RECOVERY OF FERTILITY IN BOLL WEEVILS FED CHEMOSTERILANTS.

L H Reinecke W Klassen J F Norland

*Entomol Soc Amer Ann* 63(3):511-525 REF

May 1969 420 EN82

Anthonomus grandis, Chemosterilants, Fertility, Insect behavior, Insect histology, Sex behavior, Testes.

10101-69

MARKING AND RECAPTURE OF CALIFOR-NIA RED SCALE FOR FIELD STUDIES.

R E Rice D S Moreno

*Entomol Soc Amer Ann* 63(3):558-560

May 1969 420 EN82

Aonidiella aurantii, Insect traps, Methodology, Paints.

10102-69

COMPARISON OF EFFECTS OF IRRADIATION ON THE PRIMARY SPERMATOGENIA AND MATURE SPERM OF THREE SPECIES OF DIP-TERA.

J G Ricmann B J Thorson

*Entomol Soc Amer Ann* 63(3):613-617 REF

May 1969 420 EN82

Cochliomyia macellaria, Insect physiology, Musca domestica, Phormia regina, Spermatogenesis, X-rays.

10103-69

THE DEFENSIVE BEHAVIOUR OF THE STICK INSECT ONCOTOPHASMA MARTINI (GRIF-FINI) (ORTHOPTERA: PHASMATIDAE).

M H Robinson

*Roy Entomol Soc London Proc Ser A Gen Entomol*

43(10-12):183-187 REF

31 Dec 1968 420 L84PA

Insect behavior, Insect morphology, Insect protective devices, Phasmatidae.

10104-69

STEROL AND WATER-SOLUBLE REQUIRE-MENTS FOR LARVAE OF THE RED-BANDED LEAF ROLLER, ARGYROTAENIA VELU-TINANA.

G C Rock

*Entomol Soc Amer Ann* 63(3):611-613

May 1969 420 EN82

Argyrotaenia velutinana, Insect nutrition, Larvae, Sterols, Vitamins.

10105-69

SEX ATTRACTANT OF FEMALE DERMESTID BEETLE TROGODERMA INCLUSUM I.E CONTE.

J O Rodin R M Silverstein W E Burkholder J E

Gorman

*Science* 165(3896):904-906

29 Aug 1969 470 SCI2

Attractants, Biological assay, Chemical analysis, Insect biochemistry, Pheromones, Trogoderma in-cusum.

10106-69

ISOLATION AND BIOLOGICAL PROPERTIES OF THE JUVENILE HORMONE.

H Roller J S Bjerke L M Holthaus D W Norgard

W H McShan

*J Insect Physiol* 15(3):379-389

Mar 1969 421 J825

Ecdysone, Galleria mellonella, Hormones, Hyalophora cecropia, Insect biochemistry, Insect histology, *Periplaneta americana*, *Tenebrio molitor*.

10107-69

ANATOMICAL INDICATORS FOR ASSESSING AGE OF MOSQUITOES: CHANGES IN OVARI-AN FOLLI-CLES.

B Rosay

*Entomol Soc Amer Ann* 63(3):605-611 REF

May 1969 420 EN82

Aedes nigromaculis, Aging, Culex pipiens quinquefasciatus, Insect physiology, Ovaries.

10108-69

KCL-INDUCED SPREADING DEPRESSION AND VENTILATION IN THE COCKROACH.

H D Rounds

*Compar Biochem Physiol* 24(2):653-655 REF

Feb 1968 444.8 C73

Insect physiology, Nerves, *Periplaneta americana*, Potassium chloride, Ventilation.

10109-69

BIOLOGICAL NOTES ON THE BEE TETRALONIA MINUTA AND ITS CLEP-TOPARASITE, MORGANIA HISTRIO TRANS-VAALENSIS (HYMENOPTERA: ANTHOPHORIDAE).

J G Rozen

*Entomol Soc Wash Proc* 71(1):102-107

Mar 1969 420 W27

Anthophorinae, Insect biology, Morgania histrio transvaalensis, Parasitic insects, Tetralonia minuta.

10110-69

FLEA BEETLES PHYLLOTRETA CRU-CIFERAEE GOEZE. (COLEOPTERA, CHRYSOMELIDAE) A NEW PEST OF STOCK FLOWER MATHIOLA SP. IN RAJASTHAN.

J N Sachan

*Indian J Entomol* 30(2):179

Jun 1968 420 IN23

Chrysomelidae, Insect outbreaks, Mathiola, Phyl-lotreta.

10111-69

ON THE EXPLOSION CHEMISTRY OF THE BOMBARDIER BEETLE. VI. ON THE CHEMIS-TRY OF THE SMALLEST BOMBARDIER BEE-TLE PAUSSUS FAVIERI. XLIII. COMMUNICA-TION ON ARTHROPOD PROTECTIVE SUB-STANCES. (GE)

H Schildknecht K Koob

*Naturwissenschaften* 56(6):328

Jun 1969 474 N213

Carabidae, Insect biochemistry, Insect protective devices, Secretion.

10112-69

A NEW RECORD, DORYLUS LABIATUS SHUCK. (HYMENOPTERA: FORMICIDAE) AS A PREDATOR OF MICROTERMES MYCOPHAGUS DESN. (ISOPTERA: TER-MITIDAE).

S K Sharma O P Bohra

*Indian J Entomol* 30(3):243

Sep 1968 420 IN23

Formicidae, Natural control (insects), Predaceous insects, Termites.

10113-69

RETENTION OF INTRA-CELLULAR POTASSI-UM BY THE HOUSEFLY.

H H Shatoury

*Entomol Exp Appl* 12(1):19-22

1969 421 EN895

Histochemistry, Insect biochemistry, Insect physiology, Musca domestica, Potassium.

10114-69

SELECTION FOR LINDANE RESISTANCE IN DERMESTES MACULATUS DE GEER (COLEOPTERA, DERMESTIDAE).

D D Shaw C J Lloyd

*J Stored Prod Res* 5(1):69-72 REF

May 1969 421 J829

Chlorinated hydrocarbons, Dermestes maculatus, Insect biology, Insect rearing, Insecticide resistant insects, Insecticides, Lindane.



- 10115-69**  
NOTES ON THE MALE GERM CELLS OF A BEETLE, LEPTINOTARSA DECEMLINEATA. J W Shay E E Simmons W J Dohson *Entomol News (philadelphia)* 80(7):185-191 REF Jul 1969 421 EN88  
Electron microscopy, Insect morphology, Leptinotarsa decemlineata, Reproductive organs, Spermatocytes, Spermatogenesis.
- 10116-69**  
A SIMPLE APPARATUS FOR DIPPING TREATMENT OF INSECTS FOR VARYING PERIODS OF TIME. O P Singh T P S Teotia *Indian J Entomol* 30(3):251-253 Sep 1968 420 IN23  
Chemosterilants, Dipping, Insect rearing equipment, Methodology.
- 10117-69**  
OBSERVATIONS ON THE BIOLOGY OF LATHROMEROIDES SP. (TRICHOGRAMMATIDAE: HYMENOPTERA) EGG PARASITE OF THE LEAF ROLLING WEEVIL, APODERUS SISSU MARSHALL (CURCULIONIDAE: COLEOPTERA) WITH NOTES ON THE HOST WEEVIL. R P Singh B Parshad *Indian J Entomol* 30(3):192-196 Sep 1968 420 IN23  
Curculionidae, Insect biology, Parasitic insects, Trichogrammatidae.
- 10118-69**  
NEW APPROACHES TO THE CONTROL OF PEST ORGANISMS. C N Smith *Amer Soc Agron ASA Spec Publ* 8:145-150 Nov 1966 64.9 AM3  
Attractants, Chemosterilants, Insect behavior, Insect control, Insect rearing, Sterilization.
- 10119-69**  
OVIPOSITION AND HATCHING IN TWO SPECIES OF TICKS IN RELATION TO MOISTURE DEFICIT. D E Sonenshine J A Tigner *Entomol Soc Amer Ann* 63(3):628-640 REF May 1969 420 EN82  
Amblyomma americanum, Dermacentor variabilis, Humidity, Insect eggs, Insect physiology, Mortality, Oviposition.
- 10120-69**  
NEMATODE PARASITES OF THE FACE FLY AND THE ONION MAGGOT IN FRANCE AND DENMARK. J G Stoffolano *J Econ Entomol* 62(4):792-795 REF 15 Aug 1969 421 J822  
Biological control (insects), Diptera, Heterotylenchus aherrans, Heterotylenchus autumnalis, Hylemya antiqua, Insect diseases, Musca autumnalis, Nematodes.
- 10121-69**  
THE EFFECTS OF THE REMOVAL OF THE PARASITE XENOS (INSECTA STREPSIPTERA) ON THE PROTOCEREBRAL NEUROSECRETION OF ITS HOST POLISTES (HYM. VESPIDAE). (FR) A Strambi *Acad Sci Compt Rend Ser D Sci Nat* 264(23, 1ST SEMESTER):2646-2648 05 Jun 1967 505 P21  
Insect physiology, Polistes, Stylopidae.
- 10122-69**  
INHIBITION OF THE DEFENSE REACTION OF DROSOPHILA MELANOGASTER PARASITIZED SIMULTANEOUSLY BY THE WASPS PSEUDEUCOILA BOCHEI AND PSEUDEUCOILA MELLIPES. F A Streams L Greenberg *J Invertebrate Pathol* 13(3):371-377 REF May 1969 421 J826  
Cynipidae, Drosophila melanogaster, Insect behavior, Insect physiology, Insect protective devices, Pseudeucoila bochei, Pseudeucoila mellipes.
- 10123-69**  
SEASONAL EVOLUTION OF THE HONEY BEE THERMOGENESIS, OXYGEN CONSUMPTION OF THE ISOLATED BEE AT FIVE DIFFERENT TEMPERATURES IN SUMMER AND IN WINTER. (FR) T Stussi M L Harmelin *Paris Soc Biol Compt Rend* 160(7):1503-1506 14 Jan 1967 442.9 P21  
Apis mellifera, Insect evolution, Insect physiology, Oxygen, Seasonal variation, Temperature.
- 10124-69**  
THE EFFECT OF PERILLUS BIOCULATUS (FABR.) (HET., PENTATOMIDAE) ON THE POPULATION DYNAMICS OF THE POTATO BEETLE. (GE) A Szmidi W Wegorek *Entomophaga* 12(4):403-408 1967 421 EN835  
Biological control (insects), Leptinotarsa decemlineata, Perillus bioculatus, Population, Predaceous insects. English abstract.
- 10125-69**  
VARIABILITY IN INSECTICIDE TOLERANCE OF EIGHTEEN HONEY-BEE COLONIES. A S Tahori Z Sohel M Soller *Entomol Exp Appl* 12(1):85-98 REF 1969 421 EN895  
Apis mellifera, Chlorinated hydrocarbons, DDT, Endrin, Insecticides, Organophosphorus compounds, Ronnel, Toxicology, Trichlorfon.
- 10126-69**  
A STRAIN OF NUCLEAR-POLYHEDROSIS VIRUS CAUSING EXTENSIVE CELLULAR HYPERTROPHY. Y Tanada T Hukuhara G Y Chang *J Invertebrate Pathol* 13(3):394-409 REF May 1969 421 J826  
Hypertrophy, Insect diseases, Polyhedroses, Pseudotelia unipuncta.
- 10127-69**  
ON THE OVIPOSITION BEHAVIOUR AND DEVELOPMENT OF SITOPHILUS ORYZAE LINN. IN VARIOUS NATURAL FOODS. T P S Teotia V S Singh *Indian J Entomol* 30(2):119-124 REF Jun 1968 420 IN23  
Insect behavior, Insect nutrition, Insect physiology, Oviposition, Sitophilus oryzae.
- 10128-69**  
TOXICITY OF SELECTED ACARICIDES TO SUSCEPTIBLE AND RESISTANT STRAINS OF TETRANYCHUS URTICAE KOCH. G F Thiele R A Harrison *New Zealand J Sci* 12(2):380-394 REF Jun 1969 514 N482  
Acaricides, Binapacryl, Carhamates, Carbonates, Dicofof, Insecticide resistant insects, Organophosphorus compounds, Tetranychus urticae, Toxicology.
- 10129-69**  
EXPERIMENTS ON LARVAL DIAPAUSE IN THE CARABID PTEROSTICHUS VULGARIS L. (GE) H U Thiele I Krehan *Entomol Exp Appl* 12(1):67-73 1969 421 EN895  
Carabidae, Insect physiology, Larvae, Light, Metamorphosis, Temperature. English abstract.
- 10130-69**  
EFFECTS OF EXOGENOUS MOULTING HORMONES ON PUPARIUM FORMATION IN CALLIPHORA. J A Thomson D H S Horn *Australian J Biol Sci* 22(3):761-765 REF Jun 1969 442.8 AU72  
Calliphora, Insect hormones, Insect physiology, Molting (insects), Pupae.
- 10131-69**  
LABORATORY EVALUATION OF INSECTICIDES AGAINST WHITE-FRINGED WEEVIL (GRAPHOGNATHUS LEUCOLOMA (BOHEMAN)) (COLEOPTERA: CURCULIONIDAE)) LARVAE. D H Todd *New Zeal J Agr Res* 11(4):903-910 REF Nov 1968 23 N4892  
Chemical control (insects), Chlorinated hydrocarbons, Curculionidae, Dieldrin, Diethyl O-(2-quin-oxalyl) phosphorothioate, O,O-, Diethyl O-2-pyrazinyl phosphorothioate, O,O-, Ethyl S-phenyl ethylphosphonodithioate, O-, Graphognathus leucoloma, Heptachlor, Insect pests, Insecticide trials, Insecticides, Larvae, Lindane, Soils.
- 10132-69**  
A RECORD OF DIURNAL FLIGHT IN DYTISCUS. R W J Uffen *S London Entomol Natur Hist Soc Proc Trans* 7(6,PT 1):14 Mar 1967 420 SO8  
Dytiscidae, Insect behavior, Insect flight.
- 10133-69**  
FUSEAUX VIRUS OF A SOUTH AMERICAN SCARABAEIDAE. (FR) C Vago A Amargier B Hurpin G Mcynadier J L Duthoit *Entomophaga* 13(4):373-376 1968 421 EN835  
Insect diseases, Scarabaeidae. English abstract.
- 10134-69**  
THE HISTOPATHOLOGY OF A NUCLEAR POLYHEDROSIS IN LARVAE OF THE CABBAGE LOOPER, TRICHOPLUSIA NI, RELATED TO SYMPTOMS AND MORTALITY. P V Vail I M Hall *J Invertebrate Pathol* 13(2):188-198 Mar 1969 421 J826  
Insect diseases, Larvae, Mortality, Nuclear polyhedrosis virus, Trichoplusia ni.
- 10135-69**  
A SUPPLEMENTARY LIST OF THE HOST-PLANTS OF LAC INSECTS. R K Varshney T P S Teotia *Bombay Natur Hist Soc J* 64(3):488-511 REF Dec 1967 513 B63  
Catalogs, Lacciferidae, Plants, Zoogeography.
- 10136-69**  
SENSITIVITY TO GAMMA RADIATION OF TRIBOLIUM CONFUSUM EGGS AT VARIOUS DEVELOPMENTAL STAGES. A Verecke C Perelents *Entomol Exp Appl* 12(1):62-66 1969 421 EN895  
Gamma rays, Insect eggs, Tribolium confusum.
- 10137-69**  
BEETLE. E F Vevai *Pesticides* 1(10):22-24 Jun 1968 SB951.P43  
Chemical control (insects), Chlorinated hydrocarbons, Coleoptera, Formulations, Insect identification, Insecticides, Organophosphorus compounds.
- 10138-69**  
IDENTIFICATION OF HYDROCARBONS FROM NOVOMESSOR COCKERELLI. K Vick W A Drew D J McGurk E J Eisenbraun G R Waller *Entomol Soc Amer Ann* 62(4):723-725 Jul 1969 420 EN82  
Hydrocarbons, Insect biochemistry, Methodology, Novomessor.  
Procedures and evidence are presented regarding the identification of hydrocarbons found to be present in the gasters of Novomessor cockerelli (Andre) (Hymenoptera: Formicidae). Tridecane,

## ENTOMOLOGY

10139-69

n-tetradecane, n-pentadecane, n-hexadecane, n-heptadecane, n-octadecane, and n-nonadecane were identified.

10139-69

REFINED DEFENSIVE MECHANISMS IN CHRYSOMELA SCRIPTA.

J B Wallace M S Blum

Entomol Soc Amer Ann 63(3):503-506

May 1969 420 EN82

Chemical analysis, Chrysomelidae, Insect biochemistry, Insect protective devices, Larvae, Pupae, Salicylaldehyde.

10140-69

NOTES ON THE NATURAL HISTORY OF TENEBRIONIDAE (COLEOPTERA) IN CANTEBURY.

J C Watt

New Zeal Entomol 4(2):47-49

Apr 1969 421 N48

Insect hology, Tenebrionidae.

10141-69

CONTINUOUS LABORATORY CULTURE OF THE LOCUST BORER, MEGACYLLENE ROBINIAE.

E H Wollerman C Adams G C Heaton

Entomol Soc Amer Ann 63(3):647-649

May 1969 420 EN82

Insect biology, Insect rearing, Megacyllene robiniae, Methodology.

10142-69

SPECTRAL EFFICIENCY AS FUNCTION OF LATENCY IN THE VISUAL MECHANISM OF INSECT (TENEBRIO MOLITOR L.).

U Yinon

Experientia 25(7):711

15 Jul 1969 475 EX7

Insect physiology, Light, Tenebrio molitor, Vision.

10143-69

SEXUAL DIMORPHISM IN NEUTRAL LIPID METABOLISM IN THE INDIAN-MEAL MOTH, PLODIA INTERPUNCTELLA (HUBNER).

W J Yurkiewicz

Ohio J Sci 69(2):70-73 REF

Mar 1969 410 OH3

Glycerides, Insect biochemistry, Insect metabolism, Insect physiology, Lipids, Plodia interpunctella.

Males of last instar Indian-meal moths contain slightly more neutral lipid per gram live weight than do females. The qualitative composition of the various neutral fractions is similar in both sexes. During the pupal period, the female catabolizes considerably more triglyceride than the male, resulting in a much lower triglyceride content in the newly emerged adult female. There is an almost equal rate of lipid utilization in both sexes during the first three days of adult life.

10144-69

ETOLOGY AS THE DETERMINING FACTOR OF THE NUMERICAL DISTRIBUTION OF THE SPECIES IN THE FAUNA. (IT)

E Zavattari

Accad Naz Ital Entomol Atti 8:28-40

1960 420 AC2

Insect biology, Insect ecology, Insect morphology, Parasitic insects, Population, Zoogeography.

10145-69

THE PARASITISM OF GAMASID MITES (GAMASOIDEA) ON BIRDS. (RUS)

A A Zemskaya

Zool Zhur 48(4):512-517

Apr 1969 410 R92

Birds, Insect ecology, Mites, Parasitic insects. English abstract.

## BIBLIOGRAPHY GENETICS

10146-69

EVOLUTION OF FITNESS. IV. GENETIC EVOLUTION OF INTER-SPECIFIC COMPETITIVE ABILITY IN DROSOPHILA.

F J Ayala

Genet Soc Amer Rec 61(3):737-747 REF

Mar 1969 442.9 G28

Drosophila, Insect evolution, Insect genetics, Population.

10147-69

ETHYL METHANESULFONATE (EMS) INDUCED MUTATIONS IN DROSOPHILA MELANOGASTER.

J B Bishop W R Lee

Genetics 61(2,PT 2,SUPPL):S4-S5

1969 442.8 G28

Drosophila melanogaster, Ethyl methanesulfonate, Insect genetics, Insect mutation.

10148-69

INTERACTION BETWEEN CHRONIC IRRADIATION, VIBRATION, AND CENTRIFUGATION IN THE PRODUCTION OF GENETIC EFFECTS IN DROSOPHILA.

L S Browning

Genetics 61(2,PT2,SUPPL):S7-S8

1969 442.8 G28

Centrifugation, Chromosomes, Drosophila, Gamma rays, Insect genetics, Vibration.

10149-69

ON THE DETERMINATION OF INSECT AND MITE RESISTANCE TO PESTICIDES. THE INFLUENCE OF THESE PRODUCTS IN SUBLETHAL DOSES ON ANIMALS AND IN THE TROPHIC EFFECT FOLLOWING BIOCHEMICAL REPERCUSSIONS ON PLANTS. (FR)

F Chaboussou

Rev Zool Agr Appl 67(10-12, 4TH

TRIMESTER):105-138 REF

1968 410.9 SO12

Chlorinated hydrocarbons, DDT, Insect genetics, Insect nutrition, Insecticide resistant insects, Lindane, Organophosphorus compounds, Parathion, Plants, Population.

10150-69

HOMOLOGOUS LINES OF CHROMOSOME POLYMORPHISM IN THE NATURAL POPULATIONS OF ADIRONDACK BLACK FLY (DIPTERA, SIMULIDAE). (RUS)

L A Chubareva N A Petrova

Tsitologiya 10(10):1248-1256 REF

Oct 1968 442.8 T78

Chromosomes, Genetics, Insect populations, Polymorphism, Simuliidae. English summary.

10151-69

MEIOSIS IN THE GRASSHOPPER: CHIASMA FREQUENCY AFTER ELEVATED TEMPERATURE AND X-RAYS.

K Church D E Wimber

Can J Genet Cytol 11(1):209-216 REF

Mar 1969 443.8 C16

Autoradiography, Chromosomes, Insect genetics, Meiosis, Melanoplus, Temperature, X-rays.

10152-69

A THIRD LOCUS (IPO) AFFECTING PYRIDOXAL OXIDASE IN DROSOPHILA MELANOGASTER.

J F Collins E Glassman

Genet Soc Amer Rec 61(4):833-839 REF

Apr 1969 442.9 G28

Chromosomes, Drosophila melanogaster, Enzymes, Insect genetics.

10153-69

CHROMOSOMAL POLYMORPHISM AND GENETIC LOAD IN DROSOPHILA PSEUDOOBSCURA.

D W Crumpacker V M Salceda

Genet Soc Amer Rec 61(4):859-873 REF

Apr 1969 442.9 G28

Drosophila pseudoobscura, Genes, Insect genetics, Polymorphism.

10154-69

CHROMOSOME BEHAVIOR UNDER THE INFLUENCE OF CLARET-NONDISJUNCTIONAL IN DROSOPHILA MELANOGASTER.

D G Davis

Genet Soc Amer Rec 61(3):577-594 REF

Mar 1969 442.9 G28

Chromosomes, Cytogenetics, Drosophila melanogaster, Insect genetics.

10155-69

SEGREGATION DISTORTER IN D. MELANOGASTER MALES: AN EFFECT OF FEMALE GENOTYPE ON THE SEGREGATION RATIO.

R E Denell

Genetics 61(2,PT 2,SUPPL):S13

1969 442.8 G28

Chromosomes, Drosophila melanogaster, Insect genetics, Sex.

10156-69

POPULATION GENETICS IN THE AMERICAN TROPICS. IV. TEMPORAL CHANGES EFFECTED IN NATURAL POPULATIONS OF DROSOPHILA MELANOGASTER FROM COLOMBIA.

H F Hoenigsberg L A Granobles L E Castro

Genetica 40(2):201-215 REF

1969 442.8 G282

Drosophila melanogaster, Insect genetics, Population, Seasonal variation.

Samples of Drosophila melanogaster were taken each month over several years from a locality in Fusagasuga, Columbia. Temporal shifts in gene frequencies were found. These reflect important adaptive changes in the populations, and the kind of gene pool modifications that are necessary for the better occupation of local temporal niches.

10157-69

AUTOSOMAL FRAGMENTATIONS AND FUSIONS IN ODONATA AND THEIR EVOLUTIONARY IMPLICATIONS.

B Kianta

Genetica 40(2):158-180 REF

1969 442.8 G282

Chromosomes, Cytogenetics, Insect evolution, Odonata.

10158-69

CHANGES IN CHROMOSOMES INDUCED BY DIFFERENT DNA VIRUS IN CELLS OF RHYNCHOSCIARA ANGELAE.

C Pavan A B da Cunha

Genetics 61(2,PT 2,SUPPL):S46-S47

1969 442.8 G28

Cells, Chromosomes, Cytogenetics, Deoxyribonucleic acid, Insect diseases, Rhynchosciara, Viruses.

10159-69

A MOLECULAR APPROACH TO THE STUDY OF GENIC HETEROZYGOSITY IN NATURAL POPULATIONS. IV. PATTERNS OF GENIC VARIATION IN CENTRAL, MARGINAL AND ISOLATED POPULATIONS OF DROSOPHILA PSEUDOBSCURA.

S Prakash R C Lewontin J L Hubby

Genet Soc Amer Rec 61(4):841-858 REF

Apr 1969 442.9 G28

Biochemistry, Drosophila pseudoobscura, Insect genetics, Population, Proteins.

10160-69

POSITION EFFECT ON DNA TRANSCRIPTION AND REPLICATION.

P A Roberts

Genetics 61(2,PT 2,SUPPL):S50

1969 442.8 G28

Chromosomes, Deoxyribonucleic acid, Drosophila melanogaster, Insect genetics, Lethal factor, Pupae, Vibration.

10161-69

EXPERIMENTAL EVIDENCE FOR FACTORS AFFECTING THE RELATIVE EFFICIENCY OF INDIRECT TO DIRECT SELECTION IN TRIBOLIUM CASTANEUM.



E Scheinberg

*Can J Genet Cytol* 11(1):86-96 REF

Mar 1969 443.8 C16

Insect genetics, Insect rearing, Statistical analysis, *Tribolium castaneum*.

#### 10162-69

#### THE ROLE OF SEXUALITY IN DOSAGE COMPENSATION IN DROSOPHILA.

P D Smith J C Lucchesi

*Genet Soc Amer Rec* 61(3):607-618 REF

Mar 1969 442.9 G28

Chromosomes, *Drosophila*, Insect genetics, Sex.

#### 10163-69

#### BIOCHEMICAL GENETICS OF INSECTICIDE RESISTANCE IN THE HOUSEFLY.

M Tsukamoto

*Residue Rev* 25:289-314 REF

1969 389.9 R314

Genes, Insect biochemistry, Insect genetics, Insecticide resistant insects, *Musca domestica*.

## MEDICAL ENTOMOLOGY

#### 10164-69

#### A NEW SPECIES OF AEDES (STEGOMYIA) FROM THAILAND (DIPTERA: CULICIDAE).

Y-M Huang

*Entomol Soc Wash Proc* 71(2):234-239

Jun 1969 420 W27

*Aedes scutoi*, Culicidae, Insect biology, Insect morphology, Insect physiology, Insect taxonomy, Insect vectors, Larvae, Pupae, Zoogeography.

#### 10165-69

#### RESEARCH ON THE SYNANTROPIC FLIES IN THE SOFIA AREA, IN REGARD TO THEIR EPIDEMIOLOGICAL IMPORTANCE. (RUS)

V Lavciev E Nestorova

*Bulgarska Akad Nauk Zool Inst Muz Izv* 23:5-31 REF

1967 410.9 B8721

Diptera, Human diseases, Insect vectors. French abstract.

#### 10166-69

#### ALLERGIC RESPONSES TO INSECTS.

S Shulman

*Annu Rev Entomol* 12:323-346 REF

1967 421 AN72

Allergies, Bibliography, Chemistry, Human diseases, Insects, Reviews.

## CROP PROTECTION

#### 10167-69

#### PESTICIDES AND PLOWS.

B D Ball

*Sugar Beet J* 32(3, SPRING):16-17

1969 66.8 SU38

Pesticides, Plant pest control, Plows.

#### 10168-69

#### IN YOUR GARDEN - WEEDS: ROBBERS, BUT NOT ALWAYS BAD.

Metabele

*Rhodesian Farmer* 39(11):31

26 Jul 1968 24 R347

Economic plants, Gardens, Mulches, Plant nutrition, Plant protection, Strawberries, Weeds.

#### 10169-69

#### CHEMICAL PREPARATIONS IN THE SERVICES OF AGRICULTURE AND FORESTRY. (SE)

A Srekajs S Pamie V Mance

3-487

1967 S585.S6

Agriculture, Forestry, Pesticides, Plant pest control.

## DISEASES

#### 10170-69

#### FUNGICIDAL CONTROL OF RICE DISEASES.

D V W Abeygunawardena

*Trop Agr & Peradeniya* 74(1-2, JAN-JUN):15-26 REF

Jun 1968 26 T751

Antibiotics, Blast, Chemical control (plant diseases), Fungicides, Mercury compounds, Pellicularia, Plant diseases, Rice, Seed-borne plant diseases, *Xanthomonas oryzae*.

#### 10171-69

#### CONTROL OF BARLEY LOOSE SMUT IN WISCONSIN IN 1966 AND 1967.

R W Ahrens D C Arny G L Worf L J Wrage

*U S Agr Res Serv CR* (42):15-17

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungicides, Fungus diseases (plants), Loose smut, *Ustilago nuda*.

#### 10172-69

#### DESIGNATION USED, CHEMICAL NAME, SOURCE, AND TRADEMARK NAME OF EACH FUNGICIDE MENTIONED IN THIS COMPILATION.

Anonymous

*U S Agr Res Serv CR* (42):34-36

May 1968 aSB608.G6M6

Fungicides, Tables (data), Trademarks.

#### 10173-69

#### EFFECT OF CL-50, A NEW SYNTHETIC FUNGICIDE ON CERTAIN FUNGI.

S H Ashrafi G M Ali S Hafiz R I Zuberi

*Pakistan J Sci Indus Res* 11(1):46-51

Jan 1968 475 P174

*Alternaria solani*, *Aspergillus niger*, Chemical control (plant diseases), Copper, Fungicides, Fungus cultures, *Fusarium*, *Helminthosporium hawaiiense*, Zinc.

#### 10174-69

#### CHEMICAL CONTROL OF LOOSE SMUT IN BARLEY IN MINNESOTA.

E E Bantari

*U S Agr Res Serv CR* (42):19-20

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Loose smut, Systemic fungicides, *Ustilago nuda*.

#### 10175-69

#### NUTRITION OF THE SILVER-LEAF PATHOGEN STEREOUM PURPUREUM (PERS.) FRI.

D J Beever

*New Zealand J Sci* 12(2):268-275 REF

Jun 1969 514 N482

Carbon, Fungus diseases (plants), Plant diseases, Plant nutrition, *Stereum purpureum*, Thiamine.

#### 10176-69

#### INTERACTION BETWEEN CHILLI MOSAIC AND POWDERY MILDEW IN TOBACCO.

K C Chadha S P Raychaudhuri

*Indian Phytopathol* 21(2):171-175

Jun 1968 464.8 IN2

Chilis, Fungus diseases (plants), Mosaic, Plant diseases, Powdery mildew, Tobacco, Virus diseases (plants).

#### 10177-69

#### A LEAF SPOT DISEASE OF CYAMOPSIS TETRAGONOLOBA CAUSED BY CURVULARIA LUNATA IN INDIA.

J N Chand P S Verma

*Indian Phytopathol* 21(2):239-240

Jun 1968 464.8 IN2

*Curvularia*, *Cyamopsis tetragonoloba*, Fungus diseases (plants), Leaf spot.

#### 10178-69

#### POST-INFECTION CHANGES IN THE SUGAR CONTENT OF LEAF-SPOT INFECTED BARLEY.

R Dayal M M Joshi

*Indian Phytopathol* 21(2):221-222

Jun 1968 464.8 IN2

Barley, Fungus diseases (plants), *Helminthosporium sativum*, Leaf spot, Plant biochemistry, Plant diseases, Sugars.

#### 10179-69

#### CHEMOTHERAPY OF LOOSE SMUT OF BARLEY IN CANADA.

L V Edgington Ontario Guelph Univ.

*U S Agr Res Serv CR* (42):20-21

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Drug therapy, Fungicides, Fungus diseases (plants), Loose smut, Seed treatment.

#### 10180-69

#### STUDIES ON THE INFECTION OF CUCUMBER MOSAIC VIRUS. V. THE OBSERVATION OF EPIDERMAL CELL IN THE LOCAL LESION.

Y Ehara T Misawa

*Tohoku J Agr Res* 19(3):166-172

Oct 1968 22.5 T574

Cucumber mosaic virus, Necrosis, Plant histology, Plant injuries, Virus diseases (plants).

#### 10181-69

#### METHODS OF DETERMINATION OF THE SYSTEMIC AND FUNGICIDAL PROPERTIES OF CHEMICALS APPLIED TO PLANTS WITH EMPHASIS ON CONTROL OF VERTICILLIUM WILT WITH THIABENDAZOLE AND BENLATE.

D C Erwin

*World Rev Pest Contr* 8(1, SPRING):6-22 REF

1969 79.8 W89

Benomyl, Biological assay, Chemical structure, Cotton, Fungus diseases (plants), Methodology, Systemic fungicides, Thiazolyl-benzimidazole, 2-(4-, *Verticillium*.

#### 10182-69

#### LIST OF PUBLICATIONS ON FUNGUS AND INSECT DEFECTS IN FOREST PRODUCTS.

(058):34P REF

Oct 1967 aZ5354.P2U5

Bibliography, Chemical control (plant diseases), Fungus diseases (plants), Insect pests.

#### 10183-69

#### INFLUENCE OF LIGHT ON SPORULATION BY HELMINTHOSPORIUM STENOSPILUM.

T E Freeman H H Luke

*Phytopathology* 59(3):271-273

Mar 1969 464.8 P56

*Cynodon dactylon*, *Helminthosporium stenopium*, Light, Sporulation.

#### 10184-69

#### IR-2, A GERM PLASM BANK OF VIRUS-FREE FRUIT TREE CLONES.

P R Fridlund

*Hortscience* 3(4, WINTER):227-229

1968 SB1.H6

Crop varieties, Fruit, Virus diseases (plants).

#### 10185-69

#### FREING ALFALFA CLONES FROM ALFALFA MOSAIC VIRUS BY HEAT TREATMENT.

F I Froshiser

*Phytopathology* 59(3):391-392 REF

Mar 1969 464.8 P56

Alfalfa, Heat treatment, Mosaic (alfalfa), Viruses.

#### 10186-69

#### VERTICILLIUM WILT OF TOBACCO. VI. THE INFLUENCE OF ROOTS AND STEMS ON VERTICILLIUM WILT SYMPTOMS IN TOBACCO.

L N Gibbins D S C Wright

*New Zeal J Agr Res* 11(4):789-796 REF

Nov 1968 23 N4892

10187-69

Fungus diseases (plants), Plant disease resistance, Plant diseases, Plant grafting, Roots, Stems, Tobacco, Verticillium dahliae, Wilt.

10187-69

A NEW TOMATO VIRUS FOUND IN THE ESTONIAN SSR (ASPERMY-VIRUS). (RUS)

M Goldin S Villemson

*Akad Nauk Est Ssr Izv Ser Biol* 16(3):241-246

1967 442.9 AK18

Aspermy, Tomatoes, Virus diseases (plants). English and Estonian abstracts.

10188-69

RHIZOCTONIA LEAF ROT OF COLOCASIA IN INDIA.

R K Grover R D Prasher

*China Plant Protect Bull* 16(1):6-7

Feb 1968 464.9 C47

Dasheen, Fungus diseases (plants), Mercury chloride, Potassium permanganate, Rhizoctonia, Rot.

10189-69

A SYSTEMIC OXATHIIN FUNGICIDE TO CONTROL LOOSE SMUTS, COVERING SMUTS, SEED ROTS, AND SEEDLING BLIGHTS OF WHEAT, BARLEY, OATS, AND SORGHUM.

E D Hansing

*U S Agr Res Serv CR* (42):11-15

May 1968 aSB608.G6M6

Barley, Blight, Chemical control (plant diseases), Covered smut, Fungus diseases (plants), Loose smut, Oats, Oxathiins, Rot, Sorghum, Systemic fungicides, Wheat.

10190-69

FUNGICIDAL COMPOSITION CONTAINING ZINC DITHIOCARBAZATE. PATENT 3,458,638.

R Hattai J Kinugawa H Yamamoto I Sumina B

Tamura S Suzuki

*Us Patent Office Offic Gaz* 864(5):1646

29 Jul 1969 156.65 OF2

Fungicides, Patents, Zinc dithiocarbamate.

10191-69

EFFECT OF CHEMICAL TREATMENTS ON THE CONTROL OF.

T T Herhert

*U S Agr Res Serv CR* (42):9-11

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungicides, Fungus diseases (plants), Loose smut, Ustilago nuda.

10192-69

CONTROL OF LOOSE SMUT OF WHEAT AND BARLEY IN ARKANSAS WITH FUNGICIDES.

J P Jones R D Barnett

*U S Agr Res Serv CR* (42):3

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Loose smut, Systemic fungicides, Wheat.

10193-69

SEED-MYCOFLORA OF MUSK-MELON.

G L Khandelwal R Prasad

*Bull Grain Technol* 7(1):26-30

Mar 1969 TS2120.B8

Agrosan GN, Aspergillus, Chemical control (plant diseases), Fungicides, Rhizopus, Thiram.

10194-69

CHEMICAL CONTROL OF WHEAT AND BARLEY LOOSE SMUT.

R L Kiesling

*U S Agr Res Serv CR* (42):5-7

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Fungus diseases (plants), Loose smut, Oxathiins, Systemic fungicides, Thiazole, Wheat.

10195-69

EFFECT OF TWO SYSTEMIC FUNGICIDES ON CONTROL OF LOOSE SMUT IN WHEAT.

R A Kilpatrick O G Merkle

*U S Agr Res Serv CR* (42):29

May 1968 aSB608.G6M6

Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Loose smut, Systemic fungicides, Wheat.

10196-69

EFFECTIVENESS OF FUNGICIDES IN CONTROLLING BARLEY LOOSE SMUT.

D M Kline

*U S Agr Res Serv CR* (42):28

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Chloronch, Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungicides, Fungus diseases (plants), Loose smut, Thiocarbamates, Thiram.

10197-69

THE EPIPHYTIC OF YELLOW ORANGE LEAF DISEASE OF RICE IN 1966 IN THAILAND.

H A Lamey P Surin S Disthaporn L Wathanakol

*China Plant Protect Bull* 15(4):67-69 MAP

Aug 1967 464.9 C47

Epiphytic, Leaf rust, Rice, Surveys, Virus diseases (plants).

10198-69

STANDARDIZATION OF THE INTERNATIONAL RACE NUMBERS OF PYRICULARIA ORYZAE.

K C Ling S H Ou

*Phytopathology* 59(3):339-342 REF

Mar 1969 464.8 P56

Fungus diseases (plants), Pyricularia oryzae, Rice.

10199-69

EFFICACY OF OXATHIIN FUNGICIDES FOR CONTROL OF LOOSE SMUT IN BARLEY.

R H Littrell D D Morcy

*U S Agr Res Serv CR* (42):17-18

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Systemic fungicides, Ustilago nuda.

10200-69

PRELIMINARY OBSERVATIONS ON THE TREATMENT OF WHEAT AND BARLEY WITH A FUNGICIDE TO CONTROL LOOSE SMUT IN ENGLAND.

R C F Macer

*U S Agr Res Serv CR* (42):23-25

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Systemic fungicides, Ustilago nuda, Ustilago tritici, Wheat.

10201-69

COLLETOTRICHUM NIGRUM FROM EGG-PLANT. A NEW RECORD FROM INDIA.

S B Mathur H C Phatak

*Indian Phytopathol* 21(2):235-236

Jun 1968 464.8 IN2

Collectotrichum, Eggplant, Fungus diseases (plants).

10202-69

THE FUNGICIDAL MECHANISMS IN QUINOLINE COMPOUNDS AND THEIR CHELATES.

G L McNew H Gershon

*Residue Rev* 25:107-122

1969 389.9 R314

Agricultural chemistry, Fungicides, Fungus diseases (plants), Physiology, Quinoline.

10203-69

SOME OBSERVATIONS ON CYNIPS QUERCUS FOLII L. GALLS ON QUERCUS ROBUR L. IN BYDGOSZCZ PROVINCE. (PO)

Z Michno-Zatorska

*Soc Sci Torunensis Stud Sect D (bot)* 8(1-2):19-24 REF

1967 451 T65

Cynipid leaf galls, Cynipidae, Gall-making insects, Plant diseases, Plant galls, Plant physiology, Quercus robur. English summary.

10204-69

EFFECT OF CYTOKININS ON TOBACCO MOSAIC VIRUS PRODUCTION IN LOCAL-LESION AND SYSTEMIC HOSTS.

G E Milo B I S Srivastava

*Virology* 38(1):26-31 REF

May 1969 448.8 V81

Cytokinins, Kidney beans, Leaves, Mosaic, Plant diseases, Plant injuries, Tobacco, Tobacco mosaic virus, Virology, Virus diseases (plants).

10205-69

MODE OF ACTION OF AGRICULTURAL ANTIBIOTICS DEVELOPED IN JAPAN.

T Misato

*Residue Rev* 25:93-106 REF

1969 389.9 R314

Agricultural chemistry, Antibiotics, Chemical reactions, Plant physiology.

10206-69

TRANSLLOCATION OF TOBACCO RINGSPOT VIRUS IN CUCUMBER AND ZINNIA.

B J Moore J M McGuire

*Ark Acad Sci Proc* 22:67-71

1968 500 AR42

Cucumbers, Nematode vectors, Plant disease transmission, Plant nematodes, Ring spot, Tobacco, Virus diseases (plants), Xiphinema americanum.

10207-69

FUNGICIDAL CONTROL OF SMUT DISEASES OF CEREALS.

J G Moseman

*U S Agr Res Serv CR* (42):36P

May 1968 aSB608.G6M6

Chemical control (plant diseases), Fungicides, Fungus diseases (plants), Grain, Smut.

10208-69

TOXIC METABOLITE OF ASPERGILLUS NIGER AND ITS ROLE IN ONION ROT DISEASE.

A Narain O Prakash

*Indian Phytopathol* 21(2):217-220 REF

Jun 1968 464.8 IN2

Aspergillus niger, Biological assay, Fungus diseases (plants), Onions, Plant diseases, Plant metabolism, Seeds, Toxins.

10209-69

DELETERIOUS EFFECT OF CERTAIN FUNGICIDICANTS ON THE FORMATION OF MYCORRHIZAE ON CORN BY ENDOGONE FASCICULATA AND ON CORN ROOT DEVELOPMENT.

O Neisham M B Linn

*Phytopathology* 59(3):297-300

Mar 1969 464.8 P56

Chemical control (plant diseases), Corn, Endogone fasciculata, Fungus diseases (plants).

10210-69

STUDIES ON THE BIOSYNTHESIS OF TMV. I. A SYSTEM APPROACHING A SYNCHRONIZED VIRUS SYNTHESIS IN A TOBACCO LEAF.

T Nilsson-Tillgren L Kolehmainen-Seveus D von Wettstein

*Z Verbrugslehre* 104(2):124-141 REF

28 May 1969 442.8 Z34

Electron microscopy, Mosaic, Synthesis, Tobacco, Tobacco mosaic virus, Virus diseases (plants).

10211-69

BREEDING FOR RUST RESISTANCE. ADVANCES IN GENETICS GIVE HOPE FOR TOTAL IMMUNITY.

B P Pal

*Indian Farming* 19(1):5-7

Apr 1969 22 IN283

Crop varieties, Fungus diseases (plants), Plant breeding, Plant disease resistance, Rust, Wheat.



10212-69

**THE PRESENCE OF TRISTEZA VIRUS IN CERTAIN SPECIES OF CITRUS IN CYPRUS.**

A Papasolomontos C V Economides

*China Plant Protect Bull* 16(1):8-9

Feh 1968 464.9 C47

Citrus, Surveys, Tristeza, Virus diseases (plants).

10213-69

**SURVIVAL OF ROOT-INFECTING FUNGI IN SOIL. XII. GERMINATION AND SURVIVAL OF ENDOCONIDIA AND CHLAMYDOSPORES OF THIELAVIOPSIS BASICOLA IN FALLOW SOIL AND IN SOIL ADJACENT TO GERMINATING BEAN SEED.**

G C Papavizas P B Adams

*Phytopathology* 59(3):371-378 REF

Mar 1969 464.8 P56

Beans, Chlamydosporas, Fungus diseases (plants), Soils, Thielaviopsis basicola.

10214-69

**CHEMICAL CONTROL OF LOOSE SMUT IN BARLEY.**

V D Pederson

*U S Agr Res Serv CR* (42):4

May 1968 aSB608.G6M6

Barley, Ciptan, Chemical control (plant diseases), Chlorinated hydrocarbons, Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Loose smut, Seed treatment, Systemic fungicides, Thiram.

10215-69

**HETEROBASIDION ANNOSUM.**

D N Pegler J M Waterston

*Commonwealth Mycol Inst Cmi Desc Path Fungi**Bact* (SET 20):192

1968 462.7 C73

Air-borne plant diseases, Coniferae, Fungus diseases (plants), Plant diseases, Plant geography, Polyporus, Taxonomy.

10216-69

**PIELINUS IGNARIUS.**

D N Pegler J M Waterston

*Commonwealth Mycol Inst Cmi Desc Path Fungi**Bact* (SET 20):194

1968 462.7 C73

Air-borne plant diseases, Fungus diseases (plants), Plant diseases, Plant geography, Polyporus, Populus, Rot, Salix, Trees.

10217-69

**PIELINUS POMACEUS.**

D N Pegler J M Waterston

*Commonwealth Mycol Inst Cmi Desc Path Fungi**Bact* (SET 20):196

1968 462.7 C73

Air-borne plant diseases, Fungus diseases (plants), Plant diseases, Plant geography, Plums, Polyporus, Rot, Taxonomy.

10218-69

**INONOTUS HISPIDUS.**

D N Pegler J M Waterston

*Commonwealth Mycol Inst Cmi Desc Path Fungi**Bact* (SET 20):193

1968 462.7 C73

Air-borne plant diseases, Fraxinus, Fungus diseases (plants), Plant diseases, Plant geography, Polyporus hispidus, Taxonomy, Trees.

10219-69

**EVIDENCE FOR RESTRICTION OF A PLANT VIRUS TO PHLOEM CELLS.**

W C Price

*Indian Phytopathol* 21(2):159-166 REF

Jun 1968 464.8 IN2

Electron microscopy, Phloem, Plant diseases, Plant physiology, Tristeza, Virus diseases (plants).

10220-69

**RESULTS OBTAINED WITH A SYSTEMIC OXATHIIN FUNGICIDE IN FRANCE.**

G Richard J Cognet

*U S Agr Res Serv CR* (42):21-23

May 1968 aSB608.G6M6

Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Systemic fungicides, Ustilago avenae, Ustilago nuda.

10221-69

**ELEMENTS FOR THE DIFFERENTIATED APPLICATION OF QUARANTINE AND CONTROL MEASURES OF POTATO CANKER. (RUM)**

A Savulescu A Puscasu

*Probl Agr* 21(2):36-43 MAP REF

1969 21 R862

Canker, Plant disease control, Plant quarantine, Potatoes, Synchytrium endohoticum, Zoogeography.

10222-69

**THE SYSTEMIC FUNGICIDE 2,3-DIHYDRO-5-CARBOXANILIDO-6-METHYL-1,4-OXATHIIN.**

B von Schmeling M Kulka

*U S Agr Res Serv CR* (42):1-2

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Loose smut, Systemic fungicides, Ustilago nuda, Ustilago tritici, Wheat.

10223-69

**MERCURY-RESISTANT PYRENOPHORA AVENAE IN NEW ZEALAND SEED OATS: A COMPARISON OF SIX DIFFERENT COMPOUNDS AS SEED DISINFECTANTS.**

J E Sheridan V Vachrahorn

*New Zeal J Agr Res* 11(4):812-816

Nov 1968 23 N4892

Agar, Antiseptics, Chemical control (plant diseases), Fungicide resistant fungi, Fungicides, Fungus diseases (plants), Leaf spot, Mercury compounds, Oats, Pyrenophora avenae, Seedling hight, Seedlings, Seeds.

10224-69

**LOCAL LESION HOST FOR GRASSY SHOOT VIRUS OF SUGARCANE.**

G R Singh

*Curr Sci* 38(6):148

20 Mar 1969 475 SC123

Aphididae, Biological assay, Grassy shoot, Insect vectors, Plant injuries, Sugarcane, Virus diseases (plants).

10225-69

**COMPARISON OF MYCELIAL AND SCLEROTIAL INOCULUM OF MACROPHOMINA PHASEOLI IN THE MORTALITY OF PINE SEEDLINGS UNDER VARYING SOIL CONDITIONS.**

W H Smith

*Phytopathology* 59(3):379-382 REF

Mar 1969 464.8 P56

Fungus diseases (plants), Macrophomina phaseoli, Mortality, Pinus, Seedlings.

10226-69

**STUDIES ON PHYSIOLOGY OF HELMINTHOSPORIUM AUSTRALIENSE THE CAUSAL AGENT OF A LEAF SPOT DISEASE OF BAJRA.**

B S Thind J N Chand

*Indian Phytopathol* 21(2):190-194

Jun 1968 464.8 IN2

Fungus diseases (plants), Helminthosporium, Pearl millet, Plant biochemistry, Plant diseases, Plant physiology.

10227-69

**A NECROTIC TYPE VIRUS OCCURRING ON A WEED IN GERMANY.**

J P Varma

*Indian Phytopathol* 21(2):176-181

Jun 1968 464.8 IN2

Compositae, Mosaic, Necrosis, Plant diseases, Tobacco, Virus diseases (plants), Weeds.

10228-69

**PRELIMINARY NOTE ON THE OCCURRENCE OF BLACK POINT DISEASE OF WHEAT IN INDIA.**

D Vir K L Adeakha L M Joshi K D Pathak

*Indian Phytopathol* 21(2):234-235

Jun 1968 464.8 IN2

Alternaria tenuis, Fungus diseases (plants), Helminthosporium, Plant diseases, Wheat.

10229-69

**SEED TREATMENT TRIAL, 1967.**

H A H Wallace

*U S Agr Res Serv CR* (42):8

May 1968 aSB608.G6M6

Barley, Chemical control (plant diseases), Dihydro-5-carboxanilido-6-methyl-1,4-oxathiin, 2,3-, Fungus diseases (plants), Oats, Seed treatment, Smut, Stinking smut, Systemic fungicides, Wheat.

10230-69

**VERTICILLIUM WILT OF TOBACCO. VIII. MOVEMENT OF CONIDIA OF VERTICILLIUM DAHLIAE KLEB. IN TOBACCO PLANTS.**

D S C Wright

*New Zeal J Agr Res* 11(4):803-811 REF

Nov 1968 23 N4892

Conidia, Fungus diseases (plants), Plant disease resistance, Plant disease transmission, Plant diseases, Roots, Tobacco, Verticillium dahliae, Wilt.

10231-69

**VERTICILLIUM WILT OF TOBACCO. VII. PATHOGENICITY OF ISOLATES OF VERTICILLIUM DAHLIAE KLEB. ON NEW ZEALAND TOBACCO.**

D S C Wright J M Biss

*New Zeal J Agr Res* 11(4):797-802 REF

Nov 1968 23 N4892

Fungus diseases (plants), Microorganisms, Plant diseases, Tobacco, Verticillium dahliae, Wilt.

10232-69

**RESPONSE TO PARASITES.**

C E Yarwood

*Annu Rev Plant Physiol* 18:419-438 REF

1967 450 AN78

Bacterial diseases (plants), Bibliography, Fungus diseases (plants), Photosynthesis, Plant injuries, Plant metabolism, Plant respiration, Reviews, Virus diseases (plants).

## ARTHROPODS

10233-69

**GROWERS JOIN FORCES TO BATTLE THE BOLL WEEVIL.**

Anonymous

*Chem Cour* 1:10-11

1969 421 C42

Anthonomus grandis, Azinphosmethyl, Chemical control (insects), Cotton, Crop yields, Curculionidae, Hibernation, Insect pests, Insect physiology, Insecticide application, Insecticides, Organophosphorus compounds, Spraying, Ultra-low-volume spraying.

10234-69

**COMMON LEAFHOPPER-PLANTHOPPER POPULATIONS AND INCIDENCE OF TUNGRO VIRUS IN DIAZINON-TREATED AND UNTREATED RICE PLOTS.**

S H Bac M D Pathak

*J Econ Entomol* 62(4):772-775

15 Aug 1969 421 J822

Chemical control (insects), Diazinon, Inazuma dorsalis, Insect vectors, Nephrotettix, Nilaparvata lugens, Organophosphorus compounds, Plant disease transmission, Rice, Sogatella furcifera, Tungro, Virus diseases (plants).

10235-69

**THE BIOLOGY, MODE OF ATTACK AND DAMAGE CAUSED BY THE THRIPS, (HAPLOTHRIPS TRITICI KURD) TO WHEAT CROPS. (RUM)**

E Banita

*Probl Agr* 21(2):14-19

1969 21 R862

Chemical control (insects), Haplothrips, Insect behavior, Insect biology, Organophosphorus compounds, Plant injuries, Wheat. English, French and Russian abstracts.

## 10236-69

EUROPEAN RED MITE AND TWO-SPOTTED SPIDER MITE CONTROL ON APPLES IN CALIFORNIA.

W C Batiste A Berlowitz

*J Econ Entomol* 62(4):779-781

15 Aug 1969 421 J822

Acaricides, Apples, Chemical control (insects), Mites, Organophosphorus compounds, Panonychus ulmi, Tetranychus urticae.

## 10237-69

A COMPARISON OF MALATHION, DIAZINON, FENITROTHION AND DICHLORVOS FOR CONTROL OF SITOPHILUS ORYZAE (L.) AND RHYZOPERTHA DOMINICA (F.) IN WHEAT.

B R Champ R W Steele B G Genn K D Elms

*J Stored Prod Res* 5(1):21-48 REF

May 1969 421 J829

Chemical control (insects), Diazinon, Dichlorvos, Fenthion, Insecticides, Malathion, Organophosphorus compounds, Rhyzopertha dominica, Sitophilus oryzae, Wheat.

## 10238-69

COMPARATIVE EFFICIENCY OF TRANSMISSION OF ASTER YELLOWS BY ELYMANA VIRESCENS AND MACROSTELUS FASCIFRONS AND THE RELATIVE CONCENTRATION OF THE CAUSAL AGENT IN THE VECTORS.

L N Chiykowski R C Sinha

*J Econ Entomol* 62(4):883-886 REF

15 Aug 1969 421 J822

Barley, Elymana virescens, Insect vectors, Macrosteles fascifrons, Plant disease transmission, Virus diseases (plants), Yellows.

## 10239-69

ALTERNATIVE HOST PLANTS OF TOBACCO LEAF-MINER (PIITHORIMAEA OPERCULELLA (ZELL.)).

I C Cunningham

*Queensland J Agr Anim Sci* 26(1):107-111

Mar 1969 23 Q37

Leaf miners, Phthorimaea operculella, Plants, Surveys.

## 10240-69

DISTRIBUTION OF LARVAL AND PUPAL INSTARS OF PLUSIA ARGENTIFERA GUEN. ON TOBACCO PLANTS.

I C Cunningham

*Queensland J Agr Anim Sci* 26(1):113-116

Mar 1969 23 Q37

Distribution, Larvae, Noctuidae, Plusiinae, Pupae, Tobacco.

## 10241-69

THE COLONIZATION AND SUCCESS IN GREECE OF SOME IMPORTED APHYTIS SPP. (HYM. APHELINIDAE) PARASITIC ON CITRUS SCALE INSECTS (HOM. DIASPIDIDAE).

P DeBacca I C Argyriou

*Entomophaga* 12(4):325-342 MAP

1967 421 EN835

Aphytis, Biological control (insects), Citrus, Diaspididae.

## 10242-69

BIOLOGY AND CONTROL OF LEOPARD MOTH ON PEAR TREES IN THE UNITED ARAB REPUBLIC.

M E Eldehrawi I Hanhal S M Hammad

*China Plant Protect Bull* 15(4):70-76 REF

Aug 1967 464.9 C47

Azinphosmethyl, Carharyl, Chemical control (insects), Chlorinated hydrocarbons, DDT, Insect biology, Insecticides, Malathion, Pears, Trichlorfon, Zeugera pyrina.

## 10243-69

THE STEM BORER SESAMIA BOTANEPHAGA TAMS AND BOWDEN (LEP., NOCTUIDAE) AND THE MAIZE CROP IN CENTRAL ASHANTI, GHANA.

Endrody-Younga

*Ghana J Agr Sci* 1(2):103-131 REF

1968 S19.G5

Bionomics, Climate, Corn, Crop losses, Crop yields, Insect outbreaks, Insect pests, Insect physiology, Noctuidae, French summary.

## 10244-69

BEEES AS PESTS.

D C Erwin

*World Rev Pest Contr* 8(1, SPRING):4

1969 79.8 W89

Apidae, Cotton, Insect pollinators, Plant breeding.

## 10245-69

A REVIEW OF THE USE OF INSECTICIDES ON THE MAIN AGRICULTURAL CROPS OF THE WORLD-3. SECTION 3: COTTON.

A D Hanna

*World Rev Pest Contr* 8(1, SPRING):23-45 REF

1969 79.8 W89

Chemical control (insects), Cotton, Insect control, Insecticides, Plant injuries, Reviews, Zoogeography.

## 10246-69

TWENTY-SIX VARIETIES OF FORAGE CROPS EVALUATED FOR RESISTANCE TO FEEDING BY MELANOPLUS SANGUINIPES.

G B Hewitt

*Entomol Soc Amer Ann* 62(4):737-741

Jul 1969 420 EN82

Forage plants, Melanoplus sanguinipes, Plant pest resistance.

## 10247-69

SPRAY DROPLET SIZE IN THE CONTROL OF SPRUCE BUDWORM, BOLL WEEVIL, BOLLWORM AND CABBAGE LOOPER.

C M Himmel A D Moore

*J Econ Entomol* 62(4):916-918

15 Aug 1969 421 J822

Aerial spraying, Anthonomus grandis, Carbamates, Chemical control (insects), Choristoneura fumiferana, Cotton, Dimethylamino-3,5-xylyl methylcarbamate, 4-, Environment, Forest insects, Heliothis zea, Leaves, Methyl parathion, Particle size determination, Pesticide residues, Pyrethrum, Spraying, Trichoplusia ni.

## 10248-69

ORGANOPHOSPHORUS ACARICIDES FOR CONTROLLING THE TWO-SPOTTED SPIDER MITE ON STRAWBERRIES.

A F Howland J Wilcox L I Butler D A George

*J Econ Entomol* 62(4):939-940

15 Aug 1969 421 J822

Acaricides, Chemical control (insects), Demeton, Dicofof, Dimethoate, Disulfoton, Mites, Organophosphorus compounds, Phorate, Soil sanitation, Spraying, Strawberries, Tetranychus urticae.

## 10249-69

SYMPOSIUM ON THE PRINCIPLES OF THE APPLICATION OF MICROBIOLOGICAL PREPARATIONS IN NATURE. (FR)

B Hurpin

*Entomophaga* 13(4):265-269

1968 421 EN835

Bacillus thuringiensis, Biological control (insects), Dendrolimus spectabilis, Insect ecology, Porthetria dispar, Symposia.

## 10250-69

ATHERIGONA SP. (ANTHOMYIIDAE: DIPTERA) AS A PEST OF WHEAT IN RAJASTHAN.

H C Joshi R M Khan

*Indian J Entomol* 30(3):238

Sep 1968 420 IN23

Anthomyiidae, Plant injuries, Wheat, Zoogeography.

## 10251-69

TREATMENT OF MUSTARD AND RADISH SEEDS FOR THE CONTROL OF MUSTARD SAWFLY, ATHALIA PROXIMA KLUG. AT SEEDLING STAGE.

M G Jotwani T D Yadav P Sircar P B

Mookherjee

*Indian J Entomol* 30(2):133-136

Jun 1968 420 IN23

Athalia proxima, Brassica, Chemical control (insects), Chlorinated hydrocarbons, Ethylthioethyl O,O-dimethyl phosphorodithioate, S-(2-, Insecticides, Lindane, Organophosphorus compounds, Phorate, Phosphamidon, Radishes, Seed treatment.

## 10252-69

BIOLOGICAL CONTROL OF OLIVE SCALE, PARLATORIA OLEAE (COLVEE), IN A DECIDUOUS FRUIT ORCHARD IN CALIFORNIA.

C E Kennett

*Entomophaga* 12(5):461-474

1967 421 EN835

Biological control (insects), Fruit, Insect biology, Orchards, Parlatoria oleae.

## 10253-69

EASY-TO-KILL PESTS OF FRUIT TREES...CODLING MOTH.

H F Lower

*S Australia J Agr* 72(5):179-182

Dec 1968 23 S084

Azinphosmethyl, Carbamates, Carharyl, Chemical control (insects), Fruit, Insect morphology, Insect pests, Insect traps, Insecticides, Laspeyresia pomonella, Metamorphosis, Olethreutidae, Organophosphorus compounds, Spraying.

## 10254-69

CONTRIBUTION TO THE KNOWLEDGE OF THE NATURAL ENEMIES OF BISSETIA STENIELLUS (HAMPSON) (LEP.: PYRALIDAE).

K C Mathur

*Entomophaga* 12(5):443-448 REF

1967 421 EN835

Bissetia steniellus, Braconidae, Ichneumonidae, Natural control (insects), Predaceous insects, Pyralidae, Sugarcane.

## 10255-69

STRUCTURE, STABILITY, AND ENERGY FLOW IN PLANTS AND ARTHROPODS IN A SERICEA LESPEDEZA STAND.

E F Menhinick

*Ecol Monogr* 37(3, SUMMER):255-272 REF

1967 410 EC72

Arthropoda, Ecology, Energy, Field studies, Insect ecology, Lespedeza cuneata, Population.

## 10256-69

THE FIRST LARGE-SCALE EXPERIMENTATION WITH THE BIOLOGICAL CONTROL OF THE OLIVE FLY (DACUS OLEAE GMEL.) BY MEANS OF OPIUS CONCOLOR SZEPL. SICULUS MON. IN SICILY. (FR)

S Monastero P Delanoue

*Entomophaga* 12(4):381-398 MAP

1967 421 EN835

Biological control (insects), Dacus oleae, Opius concolor, English abstract.

## 10257-69

SUSCEPTIBILITY OF SEVERAL FOREST INSECTS OF BRITISH COLUMBIA TO COMMERCIALY PRODUCED BACILLUS THURINGIENSIS. II. LABORATORY AND FIELD PATHOGENICITY TESTS.

O N Morris

*J Invertebrate Pathol* 13(2):285-295 REF

Mar 1969 421 J826

Acleris variana, Bacillus thuringiensis, Biological control (insects), Epinotia tsugana, Forest insects, Hyphantria cunea, Malacosoma pluviale, Melanophia imitata, Mortality, Thuricide, Vanessa cardui.



- 10258-69**  
EFFICIENCY OF THREE COLONIES OF MELON APHIDS AS TRANSMITTERS OF TRISTEZA VIRUS.  
P A Norman R A Sutton  
*J Econ Entomol* 62(4):968  
15 Aug 1969 421 J822  
Aphis gossypii, Insect vectors, Oranges, Plant disease transmission, Tristeza, Virus diseases (plants).
- 10259-69**  
NEW RECORD OF HYMENOPTEROUS PARASITES OF PHYTOMYZA ATRICORNIS (MEIGEN), A SERIOUS PEST OF PEA.  
S C Odak S V Dhamdhare A S Kourava  
*Indian J Entomol* 30(3):250  
Sep 1968 420 IN23  
Eulophidae, Natural control (insects), Opus, Parasitic insects, Peas, Phytomyza atricornis.
- 10260-69**  
THE EFFECT OF REMOVAL OF ARTHROPOD PREDATORS ON AN INFESTATION OF BREVICORYNE BRASSICAE (HEMIPTERA, APIIDAE) ON BRUSSELS SPROUTS.  
E Pollard  
*Entomol Exp Appl* 12(1):118-124 REF  
1969 421 EN895  
Brevicoryne brassicae, Brussels sprouts, Cerambycidae, Population, Predaceous insects, Syrphidae.
- 10261-69**  
NOTES AND CONSIDERATIONS ON THE CONTROL OF THE CYPRESS MOTH, CATORIA UNIPENNARIA (GUEN.) (LEPIDOPTERA, GEOMETRIDAE). (SP)  
A Saldarriaga V I. Posada O  
*Agr Trop* 25(3):143-145  
Mar 1969 26 AG8  
Biological control (insects), Chemical control (insects), Dichlorvos, Geometridae.
- 10262-69**  
TOXICITY OF EIGHT INSECTICIDES TO THE COCCINELLID PREDATOR CHILOMENES SEXMACULATA FABR..  
J M Satpathy G K Padhi D N Dutta  
*Indian J Entomol* 30(2):130-132  
Jun 1968 420 IN23  
Chemical control (insects), Chilomenes sexmaculata, Chlorinated hydrocarbons, Insecticides, Organophosphorus compounds, Toxicology.
- 10263-69**  
CHEMICAL CONTROL OF DROSICHA MANGIFERA (GREEN), A SERIOUS PEST OF CITRUS SPP. IN MADHYA PRADESH.  
D K Saxena R R Rawat  
*Indian J Entomol* 30(1):66-68  
Mar 1968 420 IN23  
Chemical control (insects), Chlorinated hydrocarbons, Citrus, Diazinon, DDT, Drosicha mangiferae, Endrin, Insecticides, Malathion, Organophosphorus compounds, Parathion.
- 10264-69**  
CONTROL OF FLORIDA RED SCALE IN FLORIDA WITH THE PARASITE APHYTIS HOLOXANTHUS.  
A G Selhime M H Muma W A Simanton C W McCoy  
*J Econ Entomol* 62(4):954-955  
15 Aug 1969 421 J822  
Aphytis holoxanthus, Biological control (insects), Chrysomphalus aonidum, Citrus, Parasitic insects, Population.
- 10265-69**  
INTEGRATED CONTROL OF INSECTS. A CHALLENGE FOR SCIENTISTS.  
R. F. Smith  
*Agr Sci Rev* 7(1, 1ST QUARTER):1-5  
1969 431.3 AG893  
Insect biology, Insect ecology, Integrated control (insects), Reviews.
- 10266-69**  
STUDIES ON THE CONTROL OF THE RED HAIRY CATERPILLAR, AMSACTA MOOREI BUTLER.  
B P Srivastava R K Mishra  
*Indian J Entomol* 30(2):125-129 REF  
Jun 1968 420 IN23  
Aldrin, Amsacta moorei, Benzene hexachloride, Chemical control (insects), Chlordane, Chlorinated hydrocarbons, Dichlorvos, Insecticides, Organophosphorus compounds, Parathion.
- 10267-69**  
NEEDLE MINER INFESTATIONS IN LODGEPOLE PINE EAST OF THE SIERRA CREST.  
G R Struble  
*USDA Forest Serv Res Note PSW- (177):2P*  
1968 A99.9 F7652  
Coleotechnites milleri, Defoliation, Forest insects, Insect pests, Insect physiology, Insect populations, Pinus contorta, Zoogeography.
- 10268-69**  
PRELIMINARY STUDIES ON THE INTEGRATED CONTROL OF THE PEST COMPLEX ON COWPEA, VIGWA UNGICULATA WALP., IN NIGERIA.  
T A Taylor  
*J Econ Entomol* 62(4):900-902  
15 Aug 1969 421 J822  
Bacillus thuringiensis, Cowpeas, Insect pests, Integrated control (insects), Lepidoptera, Lindane.
- 10269-69**  
CONTROL OF BRACHYRHINUS CRIBRICOLLIS INJURING ORNAMENTALS.  
G P Wene  
*J Econ Entomol* 62(4):941-942  
15 Aug 1969 421 J822  
Brachyrhinus cribricollis, Carhamates, Carharyl, Chemical control (insects), Chlordane, Chlorinated hydrocarbons, Chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate, 2-, Insecticides, Organophosphorus compounds, Ornamental plants, Oxymectonmethyl, Spraying.
- 10270-69**  
STUDIES ON INSECT DAMAGE AND GERMINATION OF SEEDS. III. GERMINATION OF WHEAT JOWAR AND MAIZE SEEDS DAMAGED BY THE DEVELOPING GRUBS OF SITOPHILUS ORYZAE L. AND RHIZOPERtha DOMINICA F..  
T D Yadav P Sircar M G Jotwani  
*Indian J Entomol* 30(1):83-84  
Mar 1968 420 IN23  
Corn, Crop losses, Rhizopertha dominica, Seed germination, Sitophilus oryzae, Wheat.

## NEMATODES

- 10271-69**  
NEMATOCIDES. PATENT 3,457,353.  
W Hafner E Kopp K Milles  
*Us Patent Office Offic Gaz* 864(4):1322  
22 Jul 1969 156.65 OF2  
Chemical control (nematodes), Nematocides, Patents, Sodium monochloroacetaldehyde bisulfite, Sulfites.

## WEEDS

- 10272-69**  
BIOLOGICAL CONTROL OF CUSCUTA SPP. II. BIOLOGY AND HOST-PLANT RANGE OF MELANAGROMYZA CUSCUTAE HIERING (DIPT. AGROMYZIDAE).  
G M Baloch A I Mohyuddin M A Ghani  
*Entomophaga* 12(5):481-489  
1967 421 EN835  
Biological control (weeds), Cuscuta, Insect biology, Melanagromyza, Phytophagous insects.

- 10273-69**  
METABOLISM OF TRIFLURALIN IN PEANUTS AND SWEET POTATOES.  
P K Biswas W Hamilton  
*Weed Sci* 17(2):206-211 REF  
Apr 1969 79.8 W41  
Biological assay, Cucumbers, Herbicides, Peanuts, Plant metabolism, Sweetpotatoes, Toxicology, Trifluralin.
- 10274-69**  
BIOCHEMICAL BASIS FOR PLANT COMPETITION.  
C C Black T M Chen R H Brown  
*Weed Sci* 17(3):338-344 REF  
Jul 1969 79.8 W41  
Competition, Light, Literature, Photosynthesis, Plant biochemistry, Plant ecology, Plant physiology, Surveys, Temperature, Weeds.
- 10275-69**  
RESPONSE OF TROPICAL VEGETATION TO HERBICIDES.  
R W Bovey C C Dowler J D Diaz-Colon  
*Weed Sci* 17(3):285-290  
Jul 1969 79.8 W41  
Cacodylic acid, Chemical control (weeds), D, 2,4-, Diquat, Herbicides, Picloram, T, 2,4,5-, Tropical plants.
- 10276-69**  
LIGHT INTENSITY AND THE ABSORPTION AND TRANSLOCATION OF 2,4,5-T BY WOODY PLANTS.  
H A Brady  
*Weed Sci* 17(3):320-322  
Jul 1969 79.8 W41  
Absorption, Herbicides, Ilex opaca, Pinus palustris, Plant physiology, Quercus nigra, Quercus stellata, T, 2,4,5-, Translocation.
- 10277-69**  
INFLUENCE OF WEED COMPETITION ON SORGHUM GROWTH.  
O C Burnside G A Wicks  
*Weed Sci* 17(3):332-334  
Jul 1969 79.8 W41  
Competition, Crop yields, Plant ecology, Plant physiology, Population, Sorghum, Weeds.
- 10278-69**  
METABOLISM OF ORGANIC PESTICIDE CHEMICALS IN HIGHER PLANTS.  
J E Casida L Lykken  
*Annu Rev Plant Physiol* 20:607-636 REF  
1969 450 AN78  
Amides, Anilides, Carhamates, Chlorinated hydrocarbons, Fungicides, Herbicides, Insecticides, Organic compounds, Plant metabolism, Reviews, Toxicology, Triazines.
- 10279-69**  
AFRICAN FEATHER GRASS--A WEED WORTH WATCHING.  
F R H Chapman  
*S Australia J Agr* 72(6):212-213  
Jan 1969 23 SO84  
Bromacil, Chemical control (weeds), DPA, Herbicides, Monuron, Pennisetum macrourum, Trichloroacetic acid, Weeds.
- 10280-69**  
EFFECTS OF SEVERAL HERBICIDES ON YEW AND JAPANESE MAPLES.  
L L Danielson C May  
*Weed Sci* 17(2):142-144 REF  
Apr 1969 79.8 W41  
Acer palmatum, Amitrole, Dinoseb, Diuron, Herbicides, CIPC, Sesone, Simazine, Taxus, Trifluralin.
- 10281-69**  
CONTROL OF AQUATIC PLANTS WITH DITHIODIUNDECANOIC ACID. PATENT 3,432,286.  
*Us Patent Office Offic Gaz* 860(2):524  
11 Mar 1969 156.65 OF2

10282-69

Aquatic plants, Chemical control (weeds), Chemicals, Dithiodiundecanoic acid, Growth factors, Inhibitors, Patents.

10282-69

A METHOD FOR SPRAYING INDIVIDUAL TREES.

C C Dowler J R McCalmont M H Byrom

*Weed Sci* 17(2):260-262

Apr 1969 79.8 W41

Chemical control (weeds), Herbicides, Methodology, Pesticide application, Spraying, Trees, Weed control.

10283-69

DOWNY BROME CONTROL BY SOIL-ACTIVE HERBICIDES FOR REVEGETATION OF RANGELANDS.

R A Evans R E Eckert B L Kay J A Young

*Weed Sci* 17(2):166-169

Apr 1969 79.8 W41

*Artemisia tridentata*, Atrazine, *Bromus tectorum*, Chemical control (weeds), Herbicides, Ranges, Weed control.

10284-69

YELLOW FOXTAIL COMPETITION IN GRAIN SORGHUM.

K C Feltner H R Hurst L E Anderson

*Weed Sci* 17(2):211-213 REF

Apr 1969 79.8 W41

Competition, Population, *Setaria glauca*, Sorghum, Water, Weeds.

10285-69

TALL WATERHEMP COMPETITION IN GRAIN SORGHUM.

K C Feltner H R Hurst L E Anderson

*Weed Sci* 17(2):214-216

Apr 1969 79.8 W41

Amaranthaceae, Competition, Sorghum, Water, Weeds.

10286-69

BEHAVIOR OF PYRAZON IN SOIL.

R Frank C M Switzer

*Weed Sci* 17(3):323-326

Jul 1969 79.8 W41

Brassica, Chromatography, Decomposition, Herbicides, Pyrazon, Soil microorganisms, Spectrophotometry.

10287-69

ABSORPTION AND TRANSLOCATION OF PYRAZON BY PLANTS.

R Frank C M Switzer

*Weed Sci* 17(3):365-370

Jul 1969 79.8 W41

Absorption, *Chenopodium album*, Herbicides, Plant physiology, Pyrazon, Sugar beets, Translocation.

10288-69

EFFECTS OF PYRAZON ON GROWTH, PHOTOSYNTHESIS, AND RESPIRATION.

R Frank C M Switzer

*Weed Sci* 17(3):344-348 REF

Jul 1969 79.8 W41

Herbicides, Photosynthesis, Plant biochemistry, Plant physiology, Plant respiration, Pyrazon.

10289-69

1967 PRE-EMERGENCE WEED CONTROL IN POTATOES ON LONG ISLAND.

D H Fricke S L Dallyn

*Northeast Weed Contr Conf Proc* 22:417-423

03 Jan 1968 79.9 N814

Chemical control (weeds), Crop yields, Herbicides, Potatoes.

10290-69

PHYTOTOXICITY OF BEMETHYLATED ANALOGS OF DIPHENAMID.

W A Gentner

*Weed Sci* 17(3):284-285

Jul 1969 79.8 W41

*Amaranthus retroflexus*, Chemical control (weeds), *Chenopodium album*, Diphenamid, Herbicides, Phytotoxicity, Rape, Tomatoes.

10291-69

REPEATED, FOLIAR APPLICATIONS OF HERBICIDES ON JOHNSONGRASS.

K C Hamilton

*Weed Sci* 17(2):245-250

Apr 1969 79.8 W41

Chemical control (weeds), Dalapon, Disodium methanearsonate, Foliar application, Herbicides, Monosodium acid methanearsonate, Sorghum halepense, Weed control.

10292-69

TRANSLOCATION OF ASSIMILATES AND DALAPON IN ESTABLISHED JOHNSONGRASS.

R J Hull

*Weed Sci* 17(3):314-320 REF

Jul 1969 79.8 W41

Carbohydrates, Dalapon, Herbicides, Plant metabolism, Plant physiology, Radioactive tracers, Sorghum halepense, Translocation.

10293-69

THE RESPONSE OF FUMITORY TO VARIOUS HERBICIDES.

L S Jeffery J D Nalewaja

*Weed Sci* 17(3):355-358

Jul 1969 79.8 W41

Chemical control (weeds), Dichlorprop, *Fumaria officinalis*, Herbicides, Humidity, Ioxynil, Temperature, Weed control.

10294-69

SELECTIVE GRASS CONTROL WITH SIDURON.

H D Kerr

*Weed Sci* 17(2):181-186

Apr 1969 79.8 W41

Chemical control (weeds), *Digitaria sanguinalis*, *Echinochloa crusgalli*, Fenuron, Grasses, Ipc, Seed treatment, Siduron, Weed control.

10295-69

BASIS FOR SELECTIVITY OF LINURON ON CARROT AND COMMON RAGWEED.

H Kuratle E M Rahn C W Woodmansee

*Weed Sci* 17(2):216-219

Apr 1969 79.8 W41

Ambrosia, Carrots, Herbicides, Linuron, Phytotoxicity, Plant metabolism, Toxicology.

10296-69

WEED CONTROL IN SUGARBEETS.

W F Meggitt

*Sugar Beet J* 32(3, SPRING):10-11

1969 66.8 SU38

Chemical control (weeds), Chloro-N-isopropylacetanilide, 2-, Herbicides, Pyrazon, Sugar beets, Trichloroacetic acid.

10297-69

CONTROL OF JOHNSONGRASS ON DRAINAGE DITCHBANKS IN SUGARCANE.

R W Millhollon

*Weed Sci* 17(3):370-373

Jul 1969 79.8 W41

Bromacil, Chemical control (weeds), *Cynodon dactylon*, Dalapon, Drainage ditches, Fenac, Herbicides, Monosodium acid methanearsonate, Sodium chlorate, Sorghum halepense, Sugarcane, Trichloroacetic acid, Weed control.

10298-69

EFFECT OF NITROGENOUS MATERIALS ON THE UPTAKE OF TRIAZINE HERBICIDES.

W H Minshall

*Weed Sci* 17(2):197-201

Apr 1969 79.8 W41

Herbicides, Plant physiology, Potassium nitrate, Tomatoes, Triazines, Urca.

10299-69

MECHANISMS OF ACTION OF HERBICIDES.

D E Moreland

*Annu Rev Plant Physiol* 18:365-386 REF

1967 450 AN78

Bibliography, Herbicides, Hill reaction, Nucleic acids, Photosynthesis, Plant metabolism, Proteins, Reviews, Toxicology.

10300-69

CHEMICAL STIMULATION OF ETHYLENE EVOLUTION AND BUD GROWTH.

P W Morgan R E Meyer M G Merkle

*Weed Sci* 17(3):353-355

Jul 1969 79.8 W41

*Acacia farnesiana*, Defoliant, Ethylene, Herbicides, Organophosphorus compounds, Plant physiology, *Prosopis juliflora*.

10301-69

REACTION OF FLAX TO DICAMBA APPLIED AT SEVERAL STAGES.

J D Nalewaja

*Weed Sci* 17(3):385-387

Jul 1969 79.8 W41

Chemical control (weeds), Dicamba, Flax, Herbicide application, Herbicides, Weed control.

10302-69

EFFECT OF SOIL WATER STRESS AND SOIL TEMPERATURE ON TRANSLOCATION OF DIURON.

*Weed Sci* 17(3):304-309 REF

Jul 1969 79.8 W41

Diuron, Herbicides, Plant physiology, Soil moisture, Soil temperature, Translocation, Wheat.

10303-69

RESPONSE OF IRONWEED AND BUCKBRUSH TO HERBICIDES AND TO HERBICIDES IN COMBINATIONS WITH MOWING, NITROGEN FERTILIZER, AND SURFACTANTS.

E J Peters J F Stritzke

*U S D A Tech Bull* (1400):16P REF

Feb 1969 1 AG84TE

D, 2,4-, Dicamba, Fenac, Fertilizers, Herbicides, Mowing, Nitrogen, Pesticide application, Phenoxy acid compounds, Picloram, Surface-active agents, *Symphoricarpos*, Trichlorobenzoic acid, 2,3,6-, Vernonia.

10304-69

TRANSLOCATION OF THE HERBICIDE DICAMBA IN PURPLE NUTSEDGE, CYPERUS ROTUNDUS.

B Ray M Wilcox

*Physiol Plant* 22(3):503-505

05 Jun 1969 450 P564 (1)

Chromatography, *Cyperus rotundus*, Dicamba, Herbicides, Plant physiology, Plant translocation.

Pairs of nutsedge plants connected by rhizomes were planted, each in a separate pan, without cutting the rhizomes. One plant within each pair was treated with 5.7 kg. of dicamba per hectare seven days later. Ten days after treatment, the treated plants and those attached by rhizomes were harvested separately and analyzed by gas chromatography. The attached plants were found to contain 6 percent as much dicamba as did the directly treated plants.

10305-69

EFFECTS OF CHLORPROPHAM VAPORS ON DODDER SEEDLINGS.

C H Slater J H Dawson W R Furtick A P Appleby

*Weed Sci* 17(2):238-241 REF

Apr 1969 79.8 W41

Alfalfa, Chemical control (weeds), Cuscuta, CIPC, Seedlings, Vapors, Weed control.

10306-69

EFFECTS OF GROWTH REGULATORS AND HERBICIDES ON GERMINATION OF HYDRILLA TURIONS.

K K Steward

*Weed Sci* 17(3):299-301 REF

Jul 1969 79.8 W41

Aquatic plants, Chemical control (weeds), D, 2,4-, Diquat, Gibberellic acid, Herbicides, Paraquat, Phytotoxicity, Plant growth regulator, Weed control, Weeds.



### 10307-69 HERBICIDE SCREENING TESTS DURING 1967 IN AGRICULTURAL CROPS AND POTTED HERBS. (DU)

J Stryckers M van Himme  
*Ghent Landbouwhoogesch Centrum Onkruidonderz Mededel* (7):1-15  
1967 79.9 G342M  
Biological assay, Crops, Herbicide application, Herbicides, Herbs.

### 10308-69 ABSORPTION AND PENETRATION OF PICLORAM IN POTATO TUBER DISCS.

C R Swanson J R Baur  
*Weed Sci* 17(3):311-314  
Jul 1969 79.8 W41  
Absorption, Chromatography, Herbicides, Penetration, Picloram, Plant physiology, Potatoes, Temperature, Toxicology.

### 10309-69 SEED DORMANCY AND GERMINATION IN ECOTYPES OF JOHNSONGRASS.

R B Taylorson C G McWhorter  
*Weed Sci* 17(3):359-361 REF  
Jul 1969 79.8 W41  
Light, Plant ecology, Potassium nitrate, Seed dormancy, Seed germination, Sorghum halepense, Temperature, Weeds.

### 10310-69 CONTROL OF GREEN RABBITBRUSH AND BIG SAGEBRUSH WITH 2,4-D AND PICLORAM.

P T Tueller R A Evans  
*Weed Sci* 17(2):233-235  
Apr 1969 79.8 W41  
Agropyron, Artemisia tridentata, Chemical control (weeds), Chrysanthemum, D, 2,4-, Picloram, Weed control.

### 10311-69 EFFECTS OF 2,4,5-T DURING THE APPROACH OF WOODY PLANT DORMANCY.

R P Upchurch J A Keaton H D Coble  
*Weed Sci* 17(2):229-233 REF  
Apr 1969 79.8 W41  
Acer rubrum, Herbicides, Plant dormancy, Quercus laevis, T, 2,4,5-.

### 10312-69 RESPONSE OF SOYBEANS TO 2,4-D, DICAMBA, AND PICLORAM.

L M Wax I A Knuth F W Slife  
*Weed Sci* 17(3):388-393 REF  
Jul 1969 79.8 W41  
D, 2,4-, Dicamba, Herbicide application, Herbicides, Picloram, Plant physiology, Soybeans.

### 10313-69 ACCURATELY PREDICTING A HERBICIDES POTENTIAL.

J W Whitworth W P Anderson  
*Weed Sci* 17(3):290-293  
Jul 1969 79.8 W41  
Biological assay, Chemical control (weeds), Field test, Herbicides.

### 10314-69 A SPRAYER FOR APPLICATION OF SMALL AMOUNTS OF HERBICIDES TO FLATS.

M Wilcox  
*Weed Sci* 17(2):263-264 REF  
Apr 1969 79.8 W41  
Herbicides, Methodology, Pesticide application, Spraying.

### 10315-69 EPTC EFFECTS ON SICKLEPOD PETIOLAR FATTY ACIDS.

R E Wilkinson W S Hardcastle  
*Weed Sci* 17(3):335-338 REF  
Jul 1969 79.8 W41  
Cassia obtusifolia, Ethyl N,N-dipropylthiocarbamate, Fatty acids, Herbicides, Plant biochemistry, Plant physiology.

### 10316-69 THE EFFECTS OF TWO PHYTOBLAND OILS ON THE POSTEMERGENCE ACTIVITY OF BROMOXYNIL AND DNBP APPLIED IN TWO SPRAY VOLUMES IN ALFALFA.

H P Wilson R D Illicki  
*Northeast Weed Contr Conf Proc* 22:294-298  
03 Jan 1968 79.9 N814  
Alfalfa, Bromoxynil, Chemical control (weeds), Dinoseb, Plant injuries.

### 10317-69 EFFECTS OF HIGH RATES OF TRIFLURALIN AND VERNOLATE ON SOYBEAN YIELD AND GROWTH.

E L Wisk R H Cole  
*Northeast Weed Contr Conf Proc* 22:482-486  
03 Jan 1968 79.9 N814  
Chemical control (weeds), Crop yields, Plant injuries, Propyl n,n-dipropylthiocarbamate, Soybeans, Trifluralin.

## OTHER PESTS

### 10318-69 METABOLISM OF STRYCHNINE NITRATE APPLIED FOR THE CONTROL OF THE BEAR.

T Inukai  
*Residue Rev* 25:315-318  
1969 389.9 R314  
Bears, Chemical control (pests), Crop losses, Livestock, Pest control, Strychnine.

### 10319-69 USE OF METALDEHYDE AS DUSTS AND SPRAYS TO CONTROL THE GIANT AFRICAN SNAIL ACHATINA FULICA BOWDICH.

M R G K Nair N M Das A Jacob  
*Indian J Entomol* 30(1):58-60  
Mar 1968 420 IN23  
Achatina fulica, Chemical control (pests), Dusting, Metaldehyde, Molluscicides, Snails, Spraying.

### 10320-69 OBSERVATIONS ON THE CONTROL OF ACHATINA FULICA BOWDICH, THE GIANT AFRICAN SNAIL WITH METHYLDEHYDE.

P D Srivastava Y N Srivastava J Singh  
*Indian J Entomol* 30(2):175-176  
Jun 1968 420 IN23  
Achatina fulica, Baits, Chemical control (pests), Metaldehyde, Molluscicides, Snails.

### 10321-69 ROLE OF HERMIT CRABS IN THE BIOLOGICAL CONTROL OF ACHATINA FULICA (BOWDICH) ON THE ANDAMANS.

P D Srivastava  
*Indian J Entomol* 30(3):217-219  
Sep 1968 420 IN23  
Achatina fulica, Biological control (pests), Crabs, Plant pest control, Population.

### 10322-69 GULELLA (INDOENEA) BICOLOR (HUTTON), A PREDATOR OF GIANT AFRICAN SNAIL ACHATINA FULICA BOWDICH.

P D Srivastava  
*Indian J Entomol* 30(3):240-241  
Sep 1968 420 IN23  
Achatina fulica, Biological control (pests), Snails, Zoogeography.

### 10323-69 RELATIONSHIP BETWEEN AMOUNT OF THINNING, TIME OF CARE, AND DAMAGES CAUSED BY RED DEER. (GE)

J Steiner  
*Sozialistische Forstwirtschaft* (18):365-369  
1968 99.8 W143  
Deer, Forest cutting systems, Time, Tree injuries.

## LIVESTOCK PROTECTION

### DISEASES

### 10324-69 VITAMIN A METABOLISM IN PROTEIN DEFICIENCY.

H R Adhikari U K Vakil A Sreenivasan  
*J Biochem* 5(3):132-137, REF  
Sep 1968 385 J822  
Biochemistry, Deficiency diseases, Metabolism, Proteins, Rats, Vitamin A.

### 10325-69 INCIDENCE OF BLUETONGUE REPORTED CALENDAR YEAR 1967.

4P MAP  
Jul 1968 A41.9 R317IN  
Bluetongue, Epidemiology, Livestock diseases, Sheep, Virus diseases (animals).

### 10326-69 A SALMONELLA TYPHIMURIUM INVOLVED IN THE REGULATION OF ISOLEUCINE, VALINE AND LEUCINE BIOSYNTHESIS.

R R Alexander J M Calvo  
*Genet Soc Amer Rec* 61(3):539-556 REF  
Mar 1969 442.9 G28  
Amino acids, Biochemistry, Genetics, Salmonella typhimurium.

### 10327-69 TOXOPLASMA GONDII: ISOLATION OF SAMPLES STARTING FROM THE DIAPHRAGMS OF CLINICALLY HEALTHY PIGS SLAUGHTERED IN SAO PAULO, BRAZIL. (POR)

V do Amhral R Macruz  
*Sao Paulo Inst Biol Arq* 3611(JAN-MAR):47-54  
Mar 1969 442.9 SA6  
Animal diseases, Swine, Toxoplasma gondii.

Eight strains of Toxoplasma gondii were isolated from diaphragms of 25 apparently healthy pigs obtained from the slaughter-houses of Sao Paulo city and to be bound for human consumption. One of the eight strains was not virulent for mice and was detected only in histological section of material from mice after the fifth blind passage.

### 10328-69 HOG CHOLERA AND OTHER COMMUNICABLE SWINE DISEASES. MISCELLANEOUS AMENDMENTS.

R J Anderson  
*Fed Regist* 34(100):8153-8157  
24 May 1969 L1.451  
Hog cholera, Legislation, Livestock diseases, Swine.

### 10329-69 OPERATOR CONSTITUTIVE MUTATIONS IN THE LEUCINE OPERON OF SALMONELLA TYPHIMURIUM.

J M Calvo P Margolin H E Umbarger  
*Genet Soc Amer Rec* 61(4):777-787 REF  
Apr 1969 442.9 G28  
Biochemistry, Genes, Leucine, Salmonella typhimurium.

### 10330-69 INACTIVATED HOG CHOLERA VIRUS VACCINE. PATENT 3,456,053.

J G Crawford  
*Us Patent Office Offic Gaz* 864(3):967  
15 Jul 1969 156.65 OF2  
Hog cholera vaccines, Hog cholera virus, Patents, Swine.

### 10331-69 VACCINATED CATTLE.....CAN HARBOR FOOT AND MOUTH DISEASE.

Agr Res 17(11):7  
May 1969 1.98 AG84  
Cattle, Disease transmission, Foot-and-mouth disease, Immunity, Livestock diseases, Pharynx, Virology, Virus diseases (animals).

10332-69

## FOOT LAMENESS IN PIGS.

K J Dobson

*S Australia J Agr* 72(6):227-230

Jan 1969 23 SO84

Baths, Concrete, Drug therapy, Feet, Foot rot (animals), Infectious diseases, Lameness, Livestock diseases, Swine, Ulcers.

10333-69

## MUTAGENIC EFFECTS OF TEPA AND METEPA IN MICE.

S S Epstein Y Bishop

*Genetics* 61(2,PT 2,SUPPL):S16

1969 442.8 G28

Animal genetics, Chemosterilants, Metepa, Mice, Tepa.

Mutagens

10334-69

## CONTROL METHOD OF INACTIVATED VACCINES AGAINST THE NEWCASTLE DISEASE BY MEANS OF THE TITULATION OF NEUTRALIZING ANTIBODIES. (SP)

J M Grillo Torrado P B de Muslerio P A Arieta

*Rev Invest Agropecuar Ser 4 Patol Anim* 4(6):65-80

1967 41.8 R3227

Antibodies, Chickens, Methodology, Newcastle disease vaccines, Serological tests, English abstract.

10335-69

## BLOAT ON DOLICHOS LABLAB.

R I Hamilton G Ruth

*Trop Grasslands* 2(2):135-136

Oct 1968 SB197.A117

Animal diseases, Animal nutrition, Bloat, Cattle, Grazing, Hyacinth dolichos, Legumes, Surface-active agents.

10336-69

## THE RELATIVE INCIDENCE OF VIBRIO FETUS INFECTION IN DAIRY AND BEEF CATTLE IN NEW SOUTH WALES.

D Jakovljevic H E R Beattie

*Australian Vet J* 45(6):275-278

Jun 1969 41.8 AU72

Cattle, Surveys, Vibrio fetus.

10337-69

## TETRACYCLINE ANTIBIOTIC COMPOSITIONS FOR ORAL USE. PATENT 3,454,697.

A Joyner C K Piercy

*Us Patent Office Offic Gaz* 864(2):575

08 Jul 1969 156.65 OF2

Antibiotics, Chlorotetracycline, Demethylchlorotetracycline, Patents, Tetracycline.

10338-69

## ISOLATION OF SALMONELLA PULLORUM FROM A CASEOUS NODULAR IN THE ORBITAL REGION OF A CHICK ARBOR ACRES BREED. (POR)

J R July A Nakano

*Sao Paulo Inst Biol Arq* 36(1 JAN-MAR):55-57

Mar 1969 442.9 SA6

Chickens, Eyes, Salmonella pullorum. English abstract.

10339-69

## SURVEY OF YEASTLIKE FUNGI AND TISSUE CHANGES IN ESOPHAGOGASTRIC REGION OF STOMACHS OF SWINE.

W L Kadel D C Kelley E H Coles

*Amer J Vet Res* 30(3):401-408 REF

Mar 1969 41.8 AM3A

Candida albicans, Esophagus, Fungi, Gastrointestinal system, Keratinization, Livestock diseases, Mycosis, Stomach, Swine, Ulcers.

10340-69

## ONTOGENY OF THE IMMUNE RESPONSE. V. FURTHER CHARACTERIZATION OF 19 S GAMMA G- AND 7 S GAMMA G-IMMUNOGLOBULINS IN THE TRUE PRIMARY IMMUNE RESPONSE IN GERMFREE, COLOSTRUM-DEPRIVED PIGLETS.

Y B Kim S G Bradley D W Watson

*J Immunol* 101(2):224-236, REF

Aug 1968 448.8 J8232

Baby pigs, Germ-free life, Globulins, Immunity.

10341-69

## ANALYTICAL STUDIES ON EXTRACTS OF LITOMOSOIDES CARINII. (GE)

G Lammiller B Enders H Zahner

*Z Parasitenk* 32(3):254-265 REF

16 Jun 1969 442.8 Z33F

Animal extracts, Biochemistry, Electrophoresis, Filariasis, Hexoses, Nitrogen, Proteins, Rodents. English abstract.

10342-69

## THE COMPARATIVE PATHOLOGY OF DUCK PLAGUE IN WILD ANSERIFORMES.

L Leibovitz

*J Wildlife Manage* 33(2):294-303

Apr 1969 410 J827

Aquatic birds, Duck plague, Ducks, Geese, Virus diseases (animals), Wildlife diseases.

10343-69

## ON THE EFFECT OF MOLDS ON VARIOUS ANIMAL SPECIES. PART 2. (GE)

M Lenz

*Z Angew Zool* 55(4):385-425 REF

1968 449.8 Z36

Animal physiology, Animals, Aspergillus niger, Bibliography, Mycosis, Termites. English abstract.

10344-69

## EQUINE VACCINES AND VACCINATIONS.

M Lyall

*Auburn Vet* 25(SPRING):100-103

1969 41.8 AU1

Equine encephalomyelitis vaccines, Equine influenza vaccines, Equine rhinopneumonitis vaccines, Horses, Immunization, Strangles (horses), Tetanus, Vaccines.

10345-69

## BABESIA ARGENTINA: SERUM CHANGES IN INFECTED CALVES.

D F Mahoney B V Goodger

*Exp Parasitol* 24(3):375-382 REF

Jun 1969 436.8 EX7

Babesia argentina, Calves, Fibrinogen, Serum.

10346-69

## RUBBER-VINE (CRYPTOSTEGIA GRANDIFLORA) TOXICITY FOR RUMINANTS.

M D McGavin

*Queensland J Agr Anim Sci* 26(1):9-19

Mar 1969 23 Q37

Livestock diseases, Poisonous plants, Ruminants, Toxicity, Weeds.

10347-69

## THE OCCURRENCE OF EPHEMERAL FEVER OF CATTLE IN VICTORIA IN 1968.

I Morgan M D Murray

*Australian Vet J* 45(6):271-274 MAP

Jun 1969 41.8 AU72

Cattle, Ephemeral fever, Epizootic diseases, Surveys.

10348-69

## CASE OF RABIES IN GUINEA PIG WITH LONG INCUBATION PERIOD. (POR)

M R Nilsson

*Sao Paulo Inst Biol Arq* 36(1 JAN-MAR):59-61

Mar 1969 442.9 SA6

Animal histology, Biological assay, Guinea pigs, Inclusion bodies, Rabies. English abstract.

Two guinea pigs were inoculated intramuscularly with rabies virus from the brain of a dog. This brain was maintained at -20 degrees C. for 10 months before inoculation. The titer of this virus was 10 to the minus 2.6/0.025 ml. when tested in adult mice by the intracerebral inoculation. A guinea pig died 373 days after inoculation and his brain was positive for rabies by detection of Negri bodies and by mouse inoculation test, with incubation period of 7-8 days.

10349-69

## RABIES DIAGNOSIS. OBSERVATIONS ON STRAINS OF VIRUS WITH LOW PATHOGENICITY. (POR)

M R Nilsson

*Sao Paulo Inst Biol Arq* 36(1 JAN-MAR):63-65

Mar 1969 442.9 SA6

Bats, Diagnosis, Livestock, Mice, Rabies virus, Vectors, Virulence.

10350-69

## OFFICIAL PROCEEDINGS. SECOND ANNUAL PACIFIC NORTHWEST ANIMAL NUTRITION CONFERENCE, AT PACIFIC SCIENCE CENTER, SEATTLE, WASHINGTON, NOVEMBER 9-10, 1967.

104P REF

Nov 1967 SF95.P3

Animal nutrition, Conferences, Deficiency diseases, Feed.

10351-69

## AN OUTBREAK OF VIBRIOSIS IN SHEEP IN NEW SOUTH WALES.

G E Robards G R Peart H Acland

*Australian Vet J* 45(6):279-280

Jun 1969 41.8 AU72

Sheep, Surveys, Vibriosis.

10352-69

## EFFECT OF MANGANESE AND COBALT ON ASCORBIC ACID METABOLISM IN RATS.

N Sasmal D Mukherjee N C Kar G C Chatterjee

*J Biochem* 53(3):123-125 REF

Sep 1968 385 J822

Ascorbic acid, Cobalt sulfate, Manganese chloride, Metabolism, Rats.

10353-69

## RESEARCH ON THE EFFECT OF THE ENTOMOPHAGOUS FUNGI BEAVERIA BASIANA (BALS.) VUILL. AND METARRHIZIUM ANISOPLIAE (METSCH.) SOROK. ON WARM-BLOODED ANIMALS. (GE)

B Schaefferberg

*Entomophaga* 13(2):175-182 REF

1968 421 EN835

Allergics, Beauveria bassiana, Entomogenous fungi, Mammals, Metarrhizium anisopliae, Toxicology. English summary.

10354-69

## EIMERIA TENELLA SCHIZONTS AND MEROZOITES IN MACROPHAGES AS SHOWN BY ELECTRON MICROSCOPY. (GE)

E Scholtyssek R G Strout A Haberkorn

*Z Parasitenk* 32(3):284-296 REF

16 Jun 1969 442.8 Z33F

Animal diseases, Eimeria tenella, Electron microscopy, Morphology. English abstract.

10355-69

## MEDICAL AND VETERINARY CHEMICALS. VOL. I, PARTS I AND II.

R Slack A W Nincham

*Oxford, Pergamon Press.* 254P

1968 RS79.S4

Antibiotics, Drugs, Malaria, Tuberculosis, Veterinary medicine, Viruses.

10356-69

## GAS CHROMATOGRAPHIC METHOD FOR DETERMINATION OF DIETHYLSTILBESTROL IN FEEDS.

I E Smiley E D Schall

*Ass Offic Anal Chem J* 52(1):107-109

Jan 1969 381 AS7

Bis-(trimethylsilyl)acetamide, N,O-, Chemical analysis, Chromatography, Diethylstilbestrol diacetate, Diethylstilbestrol, Feed additives.

10357-69

## PROBLEMS IN RAISING DUCKS.

K J Staples

*S Australia J Agr* 72(6):202-207

Jan 1969 23 SO84



Aspergillosis, Botulism, Coccidiosis, Deficiency diseases, Ducks, Food poisoning, Fowl cholera, Fumigation, Mycosis, Parasitic insects, Poultry diseases, Poultry farm management, Respiratory diseases, Salmonellosis, Sanitation, Spirochetosis, Temperature.

10358-69

THE ISOLATION OF A STRAIN OF LEPTOSPIRA, SEROTYPE HARDJO, FROM CATTLE IN QUEENSLAND.

N D Sullivan N D Stallman

*Australian Vet J* 45(6):281-283 REF

Jun 1969 41.8 AU72

Antibodies, Cattle, Leptospira hardjo, Serological tests.

10359-69

TABLET DOSAGE-FORM FOR THE IMMUNIZATION OF THE INTESTINAL TRACT WITH LIVE VIRUS PREPARATIONS. PATENT 3,458,621.

H Tint

*Us Patent Office Offic Gaz* 864(5):1644

29 Jul 1969 156.65 OF2

Immunization, Intestines, Patents, Virucides, Viruses.

10360-69

IMMUNOGENICITY OF CONCENTRATED AND PURIFIED RABIES VACCINE OF TISSUE CULTURE ORIGIN.

T J Wiktor F Sokol E Kuwert H Koprowski

*Soc Exp Biol Med Proc* 131(3):799-805 REF

Jul 1969 442.9 SO1

Immunology, Mice, Rabies vaccines, Tissue culture.

10361-69

IMMUNE LYSIS OF RABIES VIRUS-INFECTED CELLS.

T J Wiktor E Kuwert H Koprowski

*J Immunol* 101(6):1271-1282, REF

Dec 1968 448.8 J8232

Cells, Hamsters, Immunity, Lysis, Rabies.

10362-69

METHOD FOR COMBATING MICRO-ORGANISMS. PATENT 3,458,636.

C Woolf R H Wood

*Us Patent Office Offic Gaz* 864(5):1646

29 Jul 1969 156.65 OF2

Bactericides, Bis(trifluoromethyl)-3,4-difluorooxetene, 2,2-, Microorganisms, Patents, Staphylococcus aureus.

## ARTHROPODS

10363-69

THE INCIDENCE OF DEMODECTIC MITES IN THE EYELIDS OF VARIOUS MAMMALIAN HOSTS.

D W Baker W F Fisher

*J Econ Entomol* 62(4):942

15 Aug 1969 421 J822

Cattle, Deer, Demodex, Eyelids, Goats, Horses, Mites, Sheep.

10364-69

A STUDY OF THE MITES OF THE GAMASOIDEA SUPERFAMILY (PARASITIFORMES) INFESTING SMALL MAMMALS ON THE VITOSHA MOUNTAIN. (RUS)

M Koyumdjieva

*Bulgarska Akad Nauk Zool Inst Muz Izv* 23:109-137 REF

1967 410.9 B8721

Acarina, Insect hology, Mammals, Population. English abstract.

10365-69

RECORDS OF PUPIPAROUS DIPTERA (HIPOBOSCIDA) ON BIRDS IN INDIA-III.

M G R Menon Y P Beri S S Misra

*Indian J Entomol* 30(3):242

Sep 1968 420 IN23

Birds, Hippoboscidae, Parasitic insects, Pupae.

## PARASITES

10366-69

NOTES ON PARASITOLOGY: (A). CANINE HOOKWORM (ANCYLOSTOMA CANINUM) (ERCOLANI 1859, HALL, 1913) AND (B) CANINA COCCIDIOSIS (EIMERIA CANIS, WENYON 1923). (SP)

*Rev Iberica Parasitol* 29(1 JAN-MAR):63-68

Mar 1969 436.8 R32

Ancylostoma caninum, Dogs, Eimeria, Taxonomy.

10367-69

USE OF INERT PARTICLES FOR THE DIAGNOSIS OF SHEEP CISTICERCOSIS. BENTONITE TEST. (SP)

M Atienza Fernandez V Gomez Garcia J

Gonzalez Castro

*Rev Iberica Parasitol* 29(1 JAN-MAR):35-43 REF

Mar 1969 436.8 R32

Bentonite, Cysticercus, Goats, Serodiagnosis, Sheep. English abstract.

10368-69

STUDIES ON LIPID METABOLISM OF ASCARIS DURING STARVATION.

C G Beames N S Jacobsen G W Harrington

*Okla Acad Sci Proc* 47:40-44 REF

1968 500 OK42

Ascaris lumbricoides suum, Carbon dioxide, Lipids, Metabolism, Starvation.

10369-69

PYRUVATE KINASE AND PHOSPHOENOLPYRUVATE CARBOXYKINASE ACTIVITIES OF ASCARIS MUSCLE. HYMENOLEPIS DIMINUTA AND SCHISTOSOMA MANSONI.

E Bueding H J Szaz

*Compar Biochem Physiol* 24(2):511-518 REF

Feb 1968 444.8 C73

Ascaris, Biochemistry, Hymenolepis diminuta, Kinases, Muscles, Pyruvate kinase, Schistosoma mansoni.

10370-69

THE DEVELOPMENT OF THE BODY WALL OF POLYMORPHUS MINUTUS (ACANTHOCEPHALA) IN ITS INTERMEDIATE HOST GAMMARUS PULEX.

P E Butterworth

*Parasitology* 59(2):373-388 REF

May 1969 448.8 P21

Acanthocephala, Arthropoda, Morphology, Physiology, Polymorphus hoshchadis.

10371-69

CONTRIBUTION TO THE RESEARCH ON THE HELMINTH FAUNA OF WILD BIRDS IN THRACE (SOUTHERN BULGARIA) ACANTHOCEPHALA. (RUS)

K Caceva

*Bulgarska Akad Nauk Zool Inst Muz Izv* 23:175-181

1967 410.9 B8721

Acanthocephala, Birds, Surveys, Zoogeography. French abstract.

10372-69

RECENT TECHNIQUES FOR SERODIAGNOSIS OF HYDATIDOSIS. V. THE IMPORTANCE OF TESTS OF BENTONITE, LATEX AND INDIRECT HEMAGGLUTINATION IN THE FIELD SANITATION OF HIDATIOOSIS. (SP)

J G Castro

*Rev Iberica Parasitol* 28(4 OCT-DEC):553-565 REF

Dec 1968 436.8 R32

Bentonite, Echinococcosis, Hemagglutination, Latex, Sanitation control (pests), Serodiagnosis.

10373-69

ON THE ENVIRONMENT OF POLYMORPHUS MINUTUS (ACANTHOCEPHALA) IN DUCKS.

D W T Crompton

*Parasitology* 59(1):19-28 REF

Feb 1969 448.8 P21

Biochemistry, Biology, Ducks, Environment, Intestines, Parasitism, Polymorphus boschadis, Poultry diseases.

10374-69

THE EFFECT OF GASTRO-INTESTINAL SECRETIONS ON TAENIID EGG MEMBRANES. (GE)

R Gonnert H Thomas

*Z Parasitenk* 32(3):237-253 REF

16 Jun 1969 442.8 Z33F

Animal diseases, Eggs, Enzymes, Gastrointestinal system, Hydrolysis, Physiology, Taenia hydatigena, Taenia pisiformis, Taenia saginata. English abstract.

10375-69

PNEUMOSTRONGYLUS TENUIS IN MOOSE ON A DEER-FREE ISLAND.

P D Karns P A Jordan

*J Wildlife Manage* 33(2):431-433 REF

Apr 1969 410 J827

Feces, Larvae, Moose, Nematodes, Pneumostrogylus tenuis.

10376-69

DIROFILARIA IMMITIS FROM THE EYE OF A DOG.

D W Lavers D M Spratt C Thomas

*Australian Vet J* 45(6):284-286

Jun 1969 41.8 AU72

Diethylcarbamazine, Dirofilaria immitis, Dogs, Eyes, Surgery.

10377-69

ANCYLOSTOMA CANINUM: FINE STRUCTURE OF INTESTINAL EPITHELIUM.

C C Lee

*Exp Parasitol* 24(3):336-347 REF

Jun 1969 436.8 EX7

Ancylostoma caninum, Cytology, Electron microscopy, Histology, Intestines, Mitochondria.

10378-69

THE FINE STRUCTURE AND METHOD OF FEEDING OF THE TISSUE PARASITIZING STAGES OF HISTOMONAS MELICAGRIDIS.

D L Lee P L Long B J Millard J Bradley

*Parasitology* 59(1):171-184 REF

Feb 1969 448.8 P21

Biochemistry, Biology, Chickens, Electron microscopy, Histomonas melicagridis, Morphology, Nutrition, Turkeys.

10379-69

ARGININE METABOLISM IN ASCARIS LUMBRICOIDES. ACTIVITY OF ARGININE CARBOXYLASE AND ARGINASE. (SP)

J Lopez-Gorge M Monteoliva

*Rev Iberica Parasitol* 29(1 JAN-MAR):3-34 REF

Mar 1969 436.8 R32

Arginase, Ascaris lumbricoides, Bibliography, Biochemistry, Carboxylases, Metabolism. English abstract.

10380-69

THE COURSE OF NATURALLY ACQUIRED HELMINTH INFECTIONS OF HORSES GIVEN REGULAR ANTHELMINTIC TREATMENT.

M C Round

*Res Vet Sci* 9(6):583-590 REF

Nov 1968 41.8 R312

Anthelmintics, Horses, Larvae, Strongylus, Thiazolyl-henzimidazole, 2-(4-.

10381-69

SCHISTOSOMAL CIRRHOSIS IN PIGS IN JABALPUR, M. P..

H P O Shrivastav J P Duhey

*Cur Sci* 38(6):147-148

20 Mar 1969 475 SCI23

Cirrhosis, Liver, Schistosomiasis, Swine.

10382-69

SPIRURATA OF ANIMALS AND HUMANS AND THE DISEASES. (RUS)

K I Skryabine A A Soholev V M Ivashkin

## LIVESTOCK PROTECTION

10383-69

*Akad Nauk Sssr Gel'mintol Lab Tr 19(5, SUPPL):7-239 REF*  
1967 436.9 AK1

Animal diseases, Diagnosis, Histology, Human diseases, Morphology, Nematodes, Spiruridae, Taxonomy.

10383-69

**TRANSMISSION OF HISTOMONIASIS WITH MALE HETERAKIS GALLINARUM (NE-MATODA).**

W T Springer J Johnson W. M Reid  
*Parasitology 59(2):401-405 REF*

May 1969 448.8 P21

Blackhead, Disease transmission, Epizootic diseases, *Heterakis gallinarum*, Poultry diseases, Turkeys.

## COMMODITY PROTECTION

### STORAGE DISEASES

10384-69

**TREATED WATER CURBS TOMATO DECAY.**

Anonymous

*Agr Res 17(11):14*

May 1969 1.98 AG84

Bacterial diseases (plants), Chemical control (plant diseases), Chlorine, Sodium hypochlorite, Storage diseases, Surface-active agents, Tomatoes, Water treatment.

### ARTHROPODS

10385-69

**WHARF BORER.**

Anonymous

*Nat Pest Cont Ass Tech Release 16-69:1-4*

29 Jul 1969 423.9 N213T

Chemical control (insects), Insect behavior, Insect biology, Insect identification, Insecticides, *Nacerdes melanura*, Zoogeography.

10386-69

**ODOROUS HOUSE ANT FEEDS ON PHOTOGRAPHIC FILM.**

L R Brown

*J Econ Entomol 62(4):955-956*

15 Aug 1969 421 J822

Feeding, Film, Formicidae, Gelatin, Insect behavior, Insect pests, *Tapinoma sessile*.

10387-69

**THE CONTROL OF INSECTS IN BAGGED GRAIN BY THE INJECTION OF DICHLORVOS.**

A A Green D R Wilkin

*J Stored Prod Res 5(1):11-19*

May 1969 421 J829

Chemical control (insects), Dichlorvos, Grain, Insecticides, Organophosphorus compounds, *Oryzaephilus surinamensis*, *Sitophilus granarius*, Stored products.

10388-69

**STUDIES ON THE INCIDENCE AND EXTENT OF DAMAGE DUE TO INSECT PESTS IN STORED SEEDS--I. CEREAL SEEDS.**

P B Mookherjee M G Jotwani P Sircar T D

Yadav

*Indian J Entomol 30(1):61-65*

Mar 1968 420 IN23

Crop losses, Grain, Stored-product insects, Surveys.

10389-69

**OBSERVATIONS ON PROLONGED GRAIN STORAGE WITH FORCED AERATION IN ISRAEL.**

S Navarro E Donahaye M Calderon

*J Stored Prod Res 5(1):73-81 REF*

May 1969 421 J829

## BIBLIOGRAPHY

Aeration, Insect pests, Stored products, Temperature, Wheat.

10390-69

**ANALYSIS OF GRAIN STORAGE PROBLEMS IN INDIA.**

S Pradhan

*Indian J Entomol 30(1):94-103*

Mar 1968 420 IN23

Air, Chemical control (insects), Containers, Grain, Humidity, Oxygen, Storage, Stored product insects, Temperature.

10391-69

**BIOLOGICAL STUDIES IN GHANA IN THE CONTROL OF CADRA CAUTELLA (WLK.), THE TROPICAL WAREHOUSE MOTH.**

J Rawnsley

*Ghana J Agr Sci 1(2):155-159*

1968 S19.G5

Biological control (insects), *Cadra cautella*, Chemical control (insects), Ghana, Insect pests, Stored products, Warehouses. French summary.

## ENVIRONMENTAL CONTAMINATION

10392-69

**SURFACE HYDROLOGY AND PESTICIDES.**

W F Barthel D A Parsons L L McDowell E H

Grissinger

*Amer Soc Agron ASA Spec Publ 8:128-144*

Nov 1966 64.9 AM3

Chlorinated hydrocarbons, Hydrology, Pesticide analysis, Pesticide residues, Pesticides, Sulfur, Water pollution.

10393-69

**OBSERVATIONS ON THE DECLINE OF WATER MILFOIL AND OTHER AQUATIC PLANTS, MARYLAND, 1962-1967.**

H J Elker

*Northeast Weed Contr Conf Proc 22:487*

03 Jan 1968 79.9 N814

Aquatic plants, Aquatic weeds, Microorganisms, *Myriophyllum spicatum*.

10394-69

**EGGS AND CHLORINATED HYDROCARBONS.**

D C Erwin

*World Rev Pest Contr 8(1, SPRING):4*

1969 79.8 W89

Birds, Chlorinated hydrocarbons, Dichloro-2,2-bis(p-chlorophenyl) ethylene, 1,1-, DDT, Eggs.

10395-69

**RESEARCH ON POLLUTION OF CROPS, SOIL AND SHALLOW BODIES OF WATER IN LIGURIA, THROUGH RESIDUES OF SOME ORGANOCHEMICAL PESTICIDES. (IT)**

S Kanitz G Castello

*Giornate Fitopatol 49-55 REF*

26 Mar 1967 SB599.G5

Adipose tissue (animals), Aldrin, Chlorinated hydrocarbons, Chlorine, Crops, Dieldrin, DDT, Endrin, Lindane, Organic compounds, Pesticide residues, Soil contamination, Tables (data), Water pollution.

10396-69

**POTENTIALS FOR REMOVING PESTICIDES FROM WATER.**

F K Kawahara A W Breidenbach

*Amer Soc Agron ASA Spec Publ 8:122-127*

Nov 1966 64.9 AM3

Chlorinated hydrocarbons, Pesticide analysis, Pesticide residues, Pesticides, Water, Water pollution, Water treatment.

10397-69

**PESTICIDES AND CLAY MINERALS.**

G W Kunze

*Amer Soc Agron ASA Spec Publ 8:49-70 REF*

Nov 1966 64.9 AM3

Carbamates, Chlorinated hydrocarbons, Clay minerals, Fumigants, Organophosphorus compounds, Pesticide residues, Pesticides, Rainfall, Soil leaching, Soil texture.

10398-69

**MOVEMENT OF PESTICIDES IN THE SOIL.**

H E LeGrand

*Amer Soc Agron ASA Spec Publ 8:71-77*

Nov 1966 64.9 AM3

Pesticide residues, Soils, Waste disposal, Water.

10399-69

**DETERMINATION AND MEASUREMENT OF INSECTICIDE DUST PARTICLES IN ATMOSPHERES ADJACENT TO ORCHARDS.**

G B MacCollom D B Johnstone B Parker

*Bull Environ Contamination Toxicol 3(6, NOV-DEC):368-374*

Dec 1968 RA1270.P35A1

Fisheries, Food analysis, Insecticides, Metals, Orchards, Spectrophotometry.

10400-69

**INFLUENCE OF PESTICIDES ON SOIL MICROBES AND SOIL PROPERTIES.**

J P Martin

*Amer Soc Agron ASA Spec Publ 8:95-107 REF*

Nov 1966 64.9 AM3

Decomposition, Pesticide residues, Plant physiology, Soil microorganisms, Soil properties, Soils, Toxicology.

10401-69

**THE FATE OF PHENYL N,N'-DIMETHYLPHOSPHORDIAMIDATE IN SOIL.**

R W Meikle P H Christie

*Bull Environ Contamination Toxicol 4(2, MAR-APR):88-103*

Apr 1969 RA1270.P35A1

Chromatography, Degradation, Electrophoresis, Nematocides, Phenyl N,N'-dimethylphosphordiamidate, Radioisotopes, Soils.

10402-69

**CONSEQUENCES OF INSECTICIDE USE OF NONTARGET ORGANISMS.**

L D Newsom

*Annu Rev Entomol 12:257-286 REF*

1967 421 AN72

Air, Animals, Bibliography, Birds, Chlorinated hydrocarbons, Fish, Humans, Insecticide residues, Insecticides, Plants, Soils, Water, Wildlife.

10403-69

**WATER FLORAE AS INDICATORS OF IRRIGATION WATER CONTAMINATION BY DDT.**

G W Ware M K Dee W P Cahill

*Bull Environ Contamination Toxicol 3(6, NOV-DEC):333-338*

Dec 1968 RA1270.P35A1

Aquatic plants, DDT, Indicator plants, Insecticides, Irrigation, Plant water relations, Water analysis, Water pollution.

## RESIDUES

10404-69

**GLC DETERMINATION OF RESIDUES OF DISULFOTON, OXYDEMETONMETHYL, AND THEIR METABOLITES IN TOBACCO PLANTS.**

M C Bowman M Beroza C R Gentry

*Ass Offic Anal Chem J 52(1):157-162 REF*

Jan 1969 381 AS7

Chemical analysis, Chromatography, Disulfoton, Insecticide residues, Oxydemetonmethyl, Tobacco.

10405-69

**DDT IN FATS ON ANTARCTIC ANIMALS.**

H V Brewerton

*New Zealand J Sci 12(2):194-199*

Jun 1969 514 N482



Aquatic animals, Chlorinated hydrocarbons, Chromatography, DDT, Fats, Insecticide residues, Insecticides.

**10406-69**  
**PROBLEMS WITH DDT IN FISH CULTURE OPERATIONS.**

J P Cuerrier J A Keith E Stone  
*Natur Can* 94(3,MAY-JUN):315-320  
Jun 1967 410 N216

DDT, Feed, Fish, Fishery products, Insecticide residues, Roe, Trout.

**10407-69**  
**PESTICIDE RESIDUES IN THE ECOSYSTEM.**

E H Dustman L F Stickel  
*Amer Soc Agron ASA Spec Publ* 8:109-121 REF  
Nov 1966 64.9 AM3

Chlorinated hydrocarbons, DDT, Pesticide application, Pesticide residues.

**10408-69**  
**UPTAKE OF DIELDRIN BY ISOLATED PERFUSED GILLS OF RAINBOW TROUT.**

P O Fromm R C Hunter  
*Can Fish Res Board J* 26(7):1939-1942  
Jul 1969 442.9 C16J

Animal physiology, Chlorinated hydrocarbons, Cyclohexene compounds, Dieldrin, Fish, Insecticide residues, Insecticides, Trout.

**10409-69**  
**COLLABORATIVE STUDY OF CONFIRMATIVE PROCEDURES BY SINGLE SWEEP OSCILLOGRAPHIC POLAROGRAPHY FOR THE DETERMINATION OF ORGANOPHOSPHORUS PESTICIDE RESIDUES IN NONFATTY FOODS.**

R J Gajjan  
*Ass Offic Anal Chem J* 52(4):811-817 REF  
Jul 1969 381 AS7

Chemical analysis, Diazinon, Food contamination, Insecticide residues, Malathion, Methodology, Methyl parathion, Organophosphorus compounds, Parathion, Polarography.

**10410-69**  
**GAS CHROMATOGRAPHIC DETERMINATION OF RESIDUES OF DALAPON IN SEVERAL SUBSTRATES.**

M E Getzendaner  
*Ass Offic Anal Chem J* 52(4):824-831  
Jul 1969 381 AS7

Animal extracts, Chemical analysis, Chromatography, Dalapon, Herbicide residues, Plant extracts.

**10411-69**  
**INDUSTRY'S CONCERN WITH PESTICIDE RESIDUES.**

R Hansberry  
*Amer Soc Agron ASA Spec Publ* 8:10-17  
Nov 1966 64.9 AM3

Aldrin, Corn, Cotton, Endrin, Fish, Heptachlor epoxide, Insecticide residues, Pesticide residues, Rice, Soils.

**10412-69**  
**EXTRACTION AND GAS-LIQUID CHROMATOGRAPHIC DETERMINATION OF VERNOLATE IN SOIL.**

H P Hermanson M Siewierski K Helrich  
*Ass Offic Anal Chem J* 52(1):175-177  
Jan 1969 381 AS7

Chemical analysis, Chromatography, Herbicide residues, Soils, Vernolate.

A gas-liquid chromatographic system using flame photometric detection was developed for the separation and measurement of residue quantities of vernolate and 1-propanethiol in soil. With 3 per cent Apiezon L on Chromosorb G column, the limit of detection was 0.003 mg for either compound.

**10413-69**  
**MODIFICATIONS OF THE MICROMETHOD OF SAMPLE CLEANUP FOR THIN-LAYER AND GAS CHROMATOGRAPHIC SEPARATION AND DETERMINATION OF COMMON ORGANIC PESTICIDE RESIDUES.**

A M Kadoum  
*Bull Environ Contamination Toxicol* 3(6,NOV-DEC):354-359

Dec 1968 RA1270.P35A1  
Chemistry, Chromatography, Methodology, Organic compounds, Pesticide residues.

**10414-69**  
**ACTIVATION AND STANDARDIZATION OF PURIFIED SILICA GEL FOR COLUMN CHROMATOGRAPHIC CLEANUP OF PESTICIDE RESIDUE EXTRACTS.**

A M Kadoum  
*Bull Environ Contamination Toxicol* 4(2,MAR-APR):120-127

Apr 1969 RA1270.P35A1  
Chemical analysis, Chromatography, Methodology, Pesticide residues, Silica gels.

**10415-69**  
**SURVIVAL OF LYOPHILIZED BACILLUS POPILLIAE IN SOIL.**

A J Lingg K J McMahon  
*Appl Microbiol* 17(5):718-720 REF  
May 1969 448.3 AP5

Bacillus popilliae, Humidity, Longevity, Lyophilization, Soil microorganisms.

**10416-69**  
**ANALYSIS OF GRAINS FOR MULTIPLE RESIDUES OF ORGANIC FUMIGANTS.**

B Malone  
*Ass Offic Anal Chem J* 52(4):800-805 REF

Jul 1969 381 AS7  
Chemical analysis, Distillation, Fumigants, Grain, Methodology, Methyl bromide, Pesticide residues.

**10417-69**  
**NOTICE OF FILING OF PETITION FOR FOOD ADDITIVES.**

M McCart  
*Fed Regist* 34(94):7826-7827  
16 May 1969 L1.451

Bagasse, Dimethyl-3-(alpha,alpha,alpha-trifluoromethyl)uracil, 1,1-, Food additives, Herbicide residues, Tolerances.

**10418-69**  
**METHODS OF DETERMINING PESTICIDES IN FOOD PRODUCTS. (JPRS 34,946).**

A A Pokrovskiy et. al.  
5P

07 Apr 1966 TRANS1.. 15920  
Food, Methodology, Organic compounds, Organophosphorus compounds, Pesticide residues. Translation from Metody Opredeleniya Pestitsidov v Disheschevkh Produktakh, page 2, 1967.

**10419-69**  
**PEACOCK PLASMA, A USEFUL CHOLINESTERASE SOURCE FOR INHIBITION RESIDUE ANALYSIS OF INSECTICIDAL CARBAMATES.**

G Voss  
*Bull Environ Contamination Toxicol* 3(6,NOV-DEC):339-347

Dec 1968 RA1270.P35A1  
Birds, Blood plasma, Carbamates, Chemical analysis, Cholinesterases, Insecticide residues, Methodology.

**10420-69**  
**TRAPPING OF DIELDRIN LOST FROM AQUATIC ALGAE CULTURES.**

W B Wheeler  
*Ass Offic Anal Chem J* 52(4):760-764  
Jul 1969 381 AS7

Algae, Chemical analysis, Chemistry, Chromatography, Dieldrin, Distillation, Insecticide residues.

**10421-69**  
**EXTRACTION, SEPARATION, AND GLC DETECTION OF SILVEX AND ITS PROPYLENE GLYCOL ETHER ESTER IN FISH TISSUE.**

P W Williams J I Teasley  
*Ass Offic Anal Chem J* 52(4):782-785 REF

Jul 1969 381 AS7

Animal extracts, Chemical analysis, Chemistry, Fish, Quantitative analysis, Silvex.

## TOXICOLOGY

**10422-69**  
**BIODEGRADATION OF PESTICIDES.**

M Alexander  
*Amer Soc Agron ASA Spec Publ* 8:78-84  
Nov 1966 64.9 AM3  
Biodegradation, Enzymes, Metabolism, Microorganisms, Pesticides, Toxicology.

**10423-69**  
**ENDRIN INDUCED ALTERATIONS IN BOUND CARBOHYDRATES IN RAT SERUM.**

R L Coleman  
*Bull Environ Contamination Toxicol* 3(6,NOV-DEC):348-351  
Dec 1968 RA1270.P35A1  
Animal physiology, Blood serum, Carbohydrates, Endrin, Glycoproteins, Pesticides, Rats, Toxicology.

**10424-69**  
**SPECIFICITY AND MECHANISM IN THE ACTION OF SALIGENIN CYCLIC PHOSPHORUS ESTERS.**

M Eto  
*Residue Rev* 25:187-200 REF  
1969 389.9 R314  
Biochemistry, Insects, Organophosphorus compounds, Physiology, Toxicity.

**10425-69**  
**DEGRADATION AND DISAPPEARANCE OF ORTHO, PARA ISOMER OF TECHINICAL DDT IN LIVING AND DEAD AVIAN TISSUES.**

M C French D J Jefferies  
*Science* 165(3896):914-916 REF  
29 Aug 1969 470 SC12  
Animal metabolism, Birds, DDT, Insecticides, Isomers, Toxicology.

**10426-69**  
**THE IN VITRO METABOLISM OF ORGANOPHOSPHORUS INSECTICIDES BY TISSUE HOMOGENATES FROM MAMMAL AND INSECT.**

K Fukunaga J I Fukami T Shishido  
*Residue Rev* 25:223-249 REF  
1969 389.9 R314  
Animal metabolism, Degradation, Insect metabolism, Organophosphorus compounds, Tissue culture, Tissue extracts.

**10427-69**  
**STRUCTURE OF PESTICIDES AND DECOMPOSITION BY SOIL MICROORGANISMS.**

D D Kaufman  
*Amer Soc Agron ASA Spec Publ* 8:85-94 REF  
Nov 1966 64.9 AM3  
Chemical structure, Chlorinated hydrocarbons, Decomposition, Pesticide residues, Soil microorganisms, Soils.

**10428-69**  
**RESEARCHES ON GALEGA SPECIES REGARDING THEIR CONTENT OF TOXINS BY MEANS OF BIOLOGICAL METHODS. 1. TOXICITY OF GOATS-RUE (GALEGA OFFICINALIS L.) FOR WARMBLOODED ANIMALS. (GE**  
H. Kohler  
*Biol Zentralbl* 88(2, MAR-APR):165-177 REF  
Apr 1969 442.8 B523  
Mice, Plant extracts, Poisonous plants, Toxins. English abstract.

**10429-69**  
**DELAYED LETHAL EFFECT OF 2,4-DICHLOROPHENOXYACETIC ACID ON BACTERIA.**

C A Lamartiniere L T Hart A D Larson

## TOXICOLOGY

10430-69

*Bull Environ Contamination Toxicol* 4(2,MAR-APR):113-119  
Apr 1969 RA1270.P35A1  
Acrobacter aerogenes, D, 2,4-, Enzymes, Herbicides, Inhibitors, Micrococccaeae, Pseudomonas fluorescens, Staphylococcus aureus, Toxicology.

10430-69

THE DIFFERENCE IN SENSITIVITY TO THE STERILIZING ACTION OF O,O-DIETHYL-O-PARANITROPHENYL THIOPHOSPHATE OF THE EMBRYONIC TESTICLES OF QUAILS AND CHICKENS IN IN VITRO CULTURE. (FR)  
Y Lutz-Ostertag R Meinie  
*Paris Soc Biol Compt Rend* 162(8-9):1471-1472  
03 Mar 1969 442.9 P21  
Animal physiology, Chickens, Parathion, Quail, Testes, Tissue culture.

## PLANT PHYSIOLOGY & BIOCHEMISTRY

10431-69

CELL PHYSIOLOGY INVESTIGATIONS OF THE ACTION OF NEW TRIAZINE DERIVATIVES ON PETIOLE EPIDERMIS OF SOLANUM TUBEROSUM L. (GE)  
S Auerbach P Pruefer G Weise  
*Biol Zentralbl* 87(4):425-438, REF  
Jul 1968 442.8 B523  
Cells, Epithelium, Herbicides, Leaves, Plant physiology, Potatoes, Triazines. English summary. Leaf-stalk epidermis used.

10432-69

PHYSIOLOGICAL AND BIOCHEMICAL CONTRIBUTION TO FUME DAMAGE RESEARCH. 8. PHYSIOLOGICAL INVESTIGATIONS OF THE ACTION OF SO<sub>2</sub> ON THE METABOLISM OF CONIFER NEEDLES IN WINTER. (GE)  
S Boertitz  
*Biol Zentralbl* 87(4):489-506, REF  
Jul 1968 442.8 B523  
Air pollution, Coniferae, Environment, Picea abies, Picea omorika, Pine needles, Pinus sylvestris, Plant biochemistry, Plant hardiness, Plant injuries, Plant metabolism, Plant physiology, Sulfur dioxide. English and German summaries.

10433-69

DISCOVERY OF SINIGRIN AS A PHAGOSTIN-MULANT BY ATHALIA PROXIMA KLUG. (HYMENOPTERA: TENTHREDINIDAE).  
J K Bogawat B K Srivastava  
*Indian J Entomol* 30(1):89  
Mar 1968 420 IN23  
Athalia proxima, Glycosides, Plant biochemistry, Sinigrin, Tenthredinidae.

10434-69

INFLUENCE OF ATRAZINE (2-CHLORO-4-ETHYLAMINO-6-ISOPROPYLAMINO-5-TRIAZINE) ON AUXIN METABOLISM OF PLANTS.  
E Ebert Ch J V Assche  
*Experientia* 25(7):758-759 REF  
15 Jul 1969 475 EX7  
Atrazine, Herbicides, Plant biochemistry, Plant hormones, Plant metabolism, Plant physiology.

10435-69

VARIATIONS OF THE CULTURE OF FUSARIUM MONILIFORME INDUCED BY N-NITROSOETHYLUREA AND ETHYL METHANESULFONATE. (RUS)  
L I Erokhina  
*Genetika* 4(11):101-110 REF  
1968 QH431.A1G4  
Ethyl methanesulfonate, Fungus cultures, Fusarium moniliforme, Gibberellins, Plant genetics, Urea compounds. English summary.

10436-69

PLANT GROWTH REGULATORS.  
D C Erwin

## BIBLIOGRAPHY

*World Rev Pest Contr* 8(1,SPRING):5

1969 79.8 W89

Bibliography. Literature, Plant growth regulator.

10437-69

THE CORRELATION BETWEEN PHYSIOLOGICAL ACTIVITY AND PHYSIOCHEMICAL PROPERTY OF THE SUBSTITUTED PHENOLS.  
T Fujita M Nakajima  
*Residue Rev* 25:319-326 REF  
1969 389.9 R314  
Chemical activation, Chemical structure, Mathematical analysis, Phenols, Phytotoxicity, Plant biochemistry.

10438-69

EFFECT OF DICHLORO DIPHENYL TRICHLORO-ETHANE (DDT) ON LEGHEMOGLOBIN CONTENT OF ROOT NODULES OF PHASEOLUS AUREUS (GREEN GRAM).  
A C Gaur R P Pareek  
*Experientia* 25(7):777  
15 Jul 1969 475 EX7  
DDT, Hemoglobin (plants), Insecticides, Mung beans, Plant biochemistry, Plant physiology, Roots, Toxicology.

10439-69

CYTOKININS AND TRANSFER RIBONUCLEIC ACIDS. II. PRESENCE OF CYTOKININS IN DIFFERENT AMINO-ACID SPECIFIC TRANSFER RIBONUCLEIC ACIDS OF BREWER'S YEAST AS REVEALED BY THE GROWTH RESPONSE OF TOBACCO-PITH CALLUS TISSUE AND SCORZONERA CROWN-GALL TISSUE.  
M Giannattasio G Jeannin A Kovoor  
*Physiol Plant* 22(3):458-461  
05 Jun 1969 450 P564 (1)  
Cytokinins, Plant biochemistry, Ribonucleic acid, Scorzoneria, Tissue culture, Tobacco, Yeasts.

10440-69

COMPETITION BETWEEN FLAX AND WILD BUCKWHEAT.  
R D Gruenhagen J D Nalewaja  
*Weed Sci* 17(3):380-384 REF  
Jul 1969 79.8 W41  
Competition, Flax, Light, Plant ecology, Polygonum convolvulus, Population, Water, Weeds.

10441-69

VOLATILE METABOLITES FROM DIMETHYLDITHIOCARBAMATE FUNGICIDE RESIDUES.  
J W Hylin B H Chin  
*Bull Environ Contamination Toxicol* 3(6,NOV-DEC):322-332 REF  
Dec 1968 RA1270.P35A1  
Chemistry, Ferbam, Fungicides, Papayas, Pesticide residues, Plant metabolism, Radioactive tracers, Volatile substances.

10442-69

PROGRESS REPORT ON SHADE TREE INHIBITION. (ABSTRACT).  
R R Johnson P E Spangler J E Esposito  
*Northeast Weed Contr Conf Proc* 22:512  
03 Jan 1968 79.9 N814  
Plant growth inhibitors, Pruning, Shade trees.

10443-69

ON THE INHIBITORY EFFECT OF YEAST RIBONUCLEIC ACID ON THE INFECTION OF NICOTIANA GLUTINOSA BY TOBACCO MOSAIC VIRUS.  
M Meneghini M R Musumeci W B C Moraes  
*Sao Paulo Inst Biol Arq* 36(1,JAN-MAR):5-7  
Mar 1969 442.9 SA6  
Nicotiana glutinosa, Plant physiology, Ribonucleic acid, Tobacco mosaic virus, Yeasts.

10444-69

THE MODE OF ACTION OF MALEIC HYDRAZIDE: INHIBITION OF GROWTH.  
L D Nooden  
*Physiol Plant* 22(2):260-270 REF

04 Apr 1969 450 P564 (1)

Corn, Maleic hydrazide, Mitosis, Plant biochemistry, Plant growth inhibitors.

10445-69

PESTICIDE EFFECT ON PHOSPHORUS ABSORPTION FROM FERTILIZER-PESTICIDE MIXTURE APPLIED TO A TROPICAL SOIL WITH LOW AVAILABLE PHOSPHORUS VALUE.  
C S Ofori  
*Ghana J Agr Sci* 1(2):99-102  
1968 S19.G5  
Absorption, Aldrin, Chlorinated hydrocarbons, Corn, Dieldrin, Fertilizers, Pesticides, Phosphorus, Plant biochemistry, Soil properties, Tropical agriculture. French summary.

10446-69

BIOCHEMICAL STUDIES ON THE TERPENE METABOLISM IN SWEET POTATO ROOT TISSUE WITH BLACK ROT. EFFECT OF C10- AND C15-TERPENOLS ON ACETATE-2-14C INCORPORATION INTO IPOMEAMARONE.  
I Oguni K Oshima H Imaseki I Uritani  
*Agr Biol Chem* 33(1):50-62  
Jan 1969 385 AG8B  
Ceratoecystis fimbriata, Farnesol, Geraniol, Metabolism, Sweetpotatoes.

10447-69

COLCHICINE-INDUCED TETRAPLOID AZALEAS.  
R L Pryor L C Frazier  
*Hortscience* 3(4, WINTER):283-286  
1968 SB1.H6  
Azalea, Chromosomes, Colchicine, Crop varieties, Plant abnormalities, Polyploidy.

10448-69

A SURVEY OF THE CHEMICAL COMPOSITION OF POTAMOGETON AND MYRIOPHYLLUM IN NEW JERSEY.  
D N Riemer S J Toth  
*Weed Sci* 17(2):219-223  
Apr 1969 79.8 W41  
Aquatic plants, Chemical analysis, Myriophyllum, Plant biochemistry, Potamogeton, Surveys, Weeds.

10449-69

DEGRADATION OF P32-BROMOPHOS BY MICROORGANISMS AND SEEDLINGS.  
J Stenersen  
*Bull Environ Contamination Toxicol* 4(2,MAR-APR):104-112  
Apr 1969 RA1270.P35A1  
Bromophos, Degradation, Insecticides, Microbiological degradation, Plant metabolism, Radioactive tracers, Seedlings.

10450-69

THE EFFECT OF N-DIMETHYL AMINO SUCINAMIC ACID (ALAR) ON SIZE, SHAPE AND MATURITY OF DELICIOUS APPLES.  
D T Sullivan  
*Hortscience* 3(1,SPRING):18  
1968 SB1.H6  
Apples, Crop yields, Plant growth inhibitors, Spraying, Succinic acid, 2,2-dimethylhydrazide.

10451-69

PHOTOCONTROL OF ROUGH CINQUEFOIL SEED GERMINATION AND ITS ENHANCEMENT BY TEMPERATURE MANIPULATION AND KNO<sub>3</sub>.  
R. B. Taylorson  
*Weed Sci* 17(2):144-148 REF  
Apr 1969 79.8 W41  
Light, Plant physiology, Potassium nitrate, Potentilla, Seed germination, Temperature.

10452-69

REVERSION OF SENESCENCE: EFFECTS OF 2,4-DICHLOROPHENOXYACETIC ACID AND INDOLEACETIC ACID ON RESPIRATION, ETHYLENE PRODUCTION, AND RIPENING OF BANANA FRUIT SLICES.  
M Vendrell  
*Australian J Biol Sci* 22(3):601-610 REF



Jun 1969 442.8 AU72

Aging, Bananas, D, 2,4-, Ethylene, Indoleacetic acid, Plant physiology, Plant respiration.

10453-69

EFFECTS OF GIBBERELLIN A3 ON FRUIT SHAPE AND SUBSEQUENT SEED DORMANCY OF APPLE.

M N Westwood H O Bjornstad

*Hortscience* 3(1, SPRING):19-20

1968 SB1.H6

Apples, Gibberellin acid, Plant physiology, Plant regulators, Seed dormancy.

10454-69

DISTRIBUTION OF MISEROTOXIN IN VARIETIES OF ASTRAGALUS MISER DOUGL. EX HOOK.

M C Williams F A Norris

*Weed Sci* 17(2):236-238

Apr 1969 79.8 W41

Astragalus miser, Chemical analysis, Plant physiology, Poisonous plants, Poisons.

10455-69

EFFECTS OF AMMONIUM THIOCYANATE ON CARBOHYDRATE METABOLISM IN THE COTTON PLANT.

Y F Wu E Basler

*Weed Sci* 17(3):362-365 REF

Jul 1969 79.8 W41

Ammonium thiocyanate, Cotton, Hill reaction, Photosynthesis, Plant metabolism.

## CHEMISTRY

10456-69

SPRAY GEL AGENT SOLVES DRIFT PROBLEM.

Anonymous

*Farm Chem* 131(7):34

Jul 1968 57.8 AM3

Dacagin, Herbicides, Pesticide application, Spraying.

10457-69

GAS CHROMATOGRAPHIC DETERMINATION OF ETHYL O,O-DIMETHYL-DITHIOPHOSPHORYL-1-PHENYL ACETATE IN TECHNICAL GRADE CIDLAL AND ITS 50 PERCENT LIQUID FORMULATION.

B Bazzi L Ahbrazzese G Galluzzi

*Ass Offic Anal Chem J* 52(1):52-55

Jan 1969 381 AS7

Chemical analysis, Chromatography, Ethyl O,O-dimethyldithiophosphoryl-1-phenyl acetate, Formulations, Insecticides, Phenthoate.

10458-69

GAS CHROMATOGRAPHIC CHARACTERISTICS OF CHLORDANE. I. EFFECT OF AN AQUEOUS ENVIRONMENT ON THE HEPTACHLOR COMPONENT.

A Bevenue C Y Yeo

*Bull Environ Contamination Toxicol* 4(2,MAR-APR):68-76 REF

Apr 1969 RA1270.P35A1

Chemical analysis, Chlordane, Chlorinated hydrocarbons, Chromatography, Heptachlor, Insecticides, Water.

10459-69

RELEASE RATES AND HERBICIDAL ACTIVITY OF SLOW RELEASE GRANULAR FORMULATIONS. (ABSTRACT).

S R Colby D Hawes

*Northeast Weed Contr Conf Proc* 22:498

03 Jan 1968 79.9 N814

Amiben, Formulations, Herbicides, Isopropyl N-(3-chlorophenyl)carbamate, Linuron, Vernolate.

10460-69

N-(SUBSTITUTED-BENZOYL) AMINOACETO- AND AMINOPROPIONITRILES. PATENT 3,457,294.

A J Crovetti M V Neundorff

*Us Patent Office Offic Gaz* 864(4):1312

22 Jul 1969 156.65 OF2

Bactericides, Fungicides, Nitriles, Patents.

10461-69

THIN LAYER DENSITOMETRIC DETERMINATION OF ROTENONE AND DEGUCLIN.

N E Delfel W H Tallent

*Ass Offic Anal Chem J* 52(1):182-187 REF

Jan 1969 381 AS7

Chemical analysis, Chromatography, Deguelin, Insecticides, Lonchocarpus, Rotenone, Tephrosia vogelii.

10462-69

PHYSICO-CHEMICAL AND BIOPHYSICAL FACTORS AFFECTING THE ACTIVITY OF PESTICIDES.

D C Erwin

*World Rev Pest Contr* 8(1,SPRING):4-5

1969 79.8 W89

Biophysics, Penetration, Pesticides, Physical chemistry, Toxicology.

10463-69

CHEMISTRY OF INSECTICIDES.

E E Fleck

*Amer Soc Agron ASA Spec Publ* 8:18-24 REF

Nov 1966 64.9 AM3

Carbamates, Chemical reactions, Chlorinated hydrocarbons, Decomposition, Insecticide residues, Insecticides, Organophosphorus compounds, Pyrethrum, Rotenone.

10464-69

CHEMISTRY OF HERBICIDES.

V H Freed

*Amer Soc Agron ASA Spec Publ* 8:25-43 REF

Nov 1966 64.9 AM3

Adsorption, Carbamates, Chemical reactions, Herbicides, Soils, Urea compounds.

10465-69

DEGRADATION AND ANTICARBOXYLESTERASE ACTIVITY OF DISULFOTON AND PHORATE AFTER 60CO GAMMA IRRADIATION.

D I Grant C R Sherwood K A McCully

*Ass Offic Anal Chem J* 52(4):805-811 REF

Jul 1969 381 AS7

Carboxylesterase, Disulfoton, Insecticide decomposition, Insecticides, Organophosphorus compounds, Phorate, Radiation.

10466-69

INSECTICIDES, HOW TO USE THEM SAFELY AND EFFECTIVELY.

P C Hely J G Gellatley

*New S Wales Dep Agr Entomol Br Bull* 62(ED 2):40P

1966 23 N47BS

Accident prevention, Carbamates, Chlorinated hydrocarbons, Insecticides, Organophosphorus compounds, Spraying, Toxicity.

10467-69

EXTRACTION AND GAS-LIQUID CHROMATOGRAPHIC DETERMINATION OF VERNOLATE IN SOIL.

H P Hermanson M Siewierski K Helrich

*Ass Offic Anal Chem J* 52(1):175-177

Jan 1969 381 AS7

Chromatography, Pesticide analysis, Pesticide residues, Propanethiol, I-, Soils, Vernolate.

10468-69

REACTIONS OF PESTICIDES IN SOILS.

P C Kearney C S Helling

*Residue Rev* 25:25-44 REF

1969 389.9 R314

Biochemistry, Chemical structure, Pesticide residues, Pesticides, Soils.

10469-69

REVIEW OF METHODS FOR MERCURY IN PESTICIDE FORMULATIONS.

J E Launer

*Ass Offic Anal Chem J* 52(4):764-767 REF

Jul 1969 381 AS7

Chemical analysis, Chemistry, Mercury, Methodology, Pesticides.

10470-69

COMPARISON OF TEN METHODS FOR THE ANALYSIS OF MILK FOR RESIDUES OF CHLORINATED PESTICIDES.

J H Lawrence J A Burke

*Ass Offic Anal Chem J* 52(4):817-824 REF

Jul 1969 381 AS7

Chemical analysis, Chlorinated hydrocarbons, Heptachlor, Insecticide residues, Insecticides, Methodology, Milk, TDE.

10471-69

RAPID METHOD FOR THE EXTRACTION, CLEANUP, AND GLC DETERMINATION OF TOXIC RESIDUES OF TEMIK.

J C Maitlen L M McDonough M Beroza

*Ass Offic Anal Chem J* 52(4):786-789

Jul 1969 381 AS7

Carbamates, Chromatography, Extraction, Insecticide residues, Insecticides, Methodology, Quantitative analysis, Temik.

10472-69

COLLABORATIVE, STUDY OF THE SWEEP CO-DISTILLATION CLEANUP FOR CHLORINATED PESTICIDE RESIDUES IN EDIBLE FATS AND OILS.

B Malone J A Burke

*Ass Offic Anal Chem J* 52(4):790-797

Jul 1969 381 AS7

Animal extracts, Chemical analysis, Chlorinated hydrocarbons, Distillation, DDT, Fats, Insecticide residues, Methodology.

10473-69

ANALYSIS OF MULTIPLE PESTICIDE RESIDUES--CHEMICAL IDENTITY AND CONFIRMATION OF RESULTS.

K A McCully

*World Rev Pest Contr* 8(1,SPRING):59-74 REF

1969 79.8 W89

Chemical analysis, Chromatography, Methodology, Pesticide residues, Spectrometry.

10474-69

THE INSECTICIDES; CHEMISTRY, MODE OF ACTION, AND TOXICITY. (GE

W Perkow

*Heidelberg, Huethig* 565 P

1968 SB951.P44

Biochemistry, Chemistry, Insecticides, Toxicology.

10475-69

ACETONITRILE EXTRACTION AND DETERMINATION OF CARBARYL IN FRUITS AND VEGETABLES.

M L Porter R J Gajan J A Burke

*Ass Offic Anal Chem J* 52(1):177-181

Jan 1969 381 AS7

Carbaryl, Chromatography, Extraction, Fruit, Pesticide analysis, Pesticide residues, Spectrophotometry, Vegetables.

10476-69

CHEMISTRY OF FUNGICIDES.

S Rich

*Amer Soc Agron ASA Spec Publ* 8:44-48

Nov 1966 64.9 AM3

Alternaria, Captan, Carbamates, Chemical control (plant diseases), Chloranil, Dichloro-6-(o-chloroanilino)-s-triazine, 2,4-, Dimethylamino)benzenediazo sodium sulfonate, p-, Fungicides, Maltic hydrazide, Pentachloronitrobenzene, Simazine, Sodium N-methyldithiocarbamate.

10477-69

ATRAZINE DEGRADATION IN TWO SOIL PROFILES.

F W Roeth T L Lavy O C Burnside

*Weed Sci* 17(2):202-205 REF

Apr 1969 79.8 W41

Atrazine, Carbon-14, Degradation, Herbicides, Soil profiles.

## CHEMISTRY

10478-69

### 10478-69 CONVERSION OF HEPTACHLOR TO ITS EPOXIDE.

J Singh

*Bull Environ Contamination Toxicol* 4(2,MAR-APR):77-79

Apr 1969 RA1270.P35A1

Chlorinated hydrocarbons, Heptachlor, Heptachlor epoxide, Oxidation, Synthesis.

10479-69

### DISTRIBUTION RATIO OF SOME CHLORINATED HYDROCARBON INSECTI- CIDES BETWEEN HEXANE AND WATER.

S Voerman

*Bull Environ Contamination Toxicol* 4(2,MAR-APR):64-67

Apr 1969 RA1270.P35A1

Aldrin, Chemical analysis, Chlorinated hydrocarbons, Dieldrin, DDT, Heptachlor, Heptachlor epoxide, Hexane, Insecticides, Lindane, Solubility, Water.

10480-69

### EVALUATION OF EXTRACTION AND CLEANUP METHODS FOR ANALYSIS OF DDT AND DDE IN GREEN ALFALFA.

G W Ware M K Dec

*Bull Environ Contamination Toxicol* 3(6,NOV-DEC):375-382

Dec 1968 RA1270.P35A1

Alfalfa, Chemical analysis, Chlorinated hydrocarbons, Chromatography, Dichloro-2,2-bis(p-chlorophenyl) ethylene, 1,1-, DDT, Electron capture, Extraction techniques, Insecticide residues, Insecticides.

## BIBLIOGRAPHY

10481-69

### REACTION OF AFLATOXIN B1 WITH ACETIC ACID-THIONYL CHLORIDE.

M Wiley A C Weiss N Bennett

*Ass Offic Anal Chem J* 52(1):75-76

Jan 1969 381 AS7

Acetyl-2-hydro-6-methoxydifurocoumarone, 1-, Aflatoxin, Chemical analysis, Isomers.

10482-69

### NOTE ON VERSATILITY OF SILICONE DOW CORNING II SUBSTRATE FOR GAS CHRO- MATOGRAPHY OF PESTICIDES.

F C Wright J C Riner

*Ass Offic Anal Chem J* 52(4):879

Jul 1969 381 AS7

Chlorinated hydrocarbons, Chromatography, Methodology, Organophosphorus compounds, Pesticides.

## ENGINEERING

10483-69

### AN EVALUATION OF HERBICIDE INCOR- PORATION EQUIPMENT.

L E Bode K H Read M R Gebhardt C L Day

*Mo Agr Exp Sta Res Bull* (946):42P REF

Feb 1969 100 M693 (3)

Dairy equipment, Herbicide application, Herbicides, Trifluralin.

10484-69

### AN EVALUATION OF HERBICIDE INCOR- PORATION EQUIPMENT.

L E Bode K H Read M R Gebhardt C L Day

*Mo Agr Exp Sta Res Bull* 946:42P

Feb 1969 100 M693 (3)

Agricultural engineering, Chemical control (weeds), Chromatography, Dairy equipment, Herbicides, Pesticide application, Trifluralin, Weed control.

## INDUSTRY

### ECONOMICS

10485-69

### GROWING CHRISTMAS TREES ON A POWER LINE RIGHT-OF-WAY.

W P MacConnell J J Joslyn

*Northeast Weed Contr Conf Proc* 22:329-333

03 Jan 1968 79.9 N814

Brush control, Christmas trees, Costs, T, 2,4,5-.

## EDUCATION

10486-69

### RESEARCH AND EDUCATION NEEDS IN THE USE OF PESTICIDES.

W C Shaw

*Amer Soc Agron ASA Spec Publ* 8:1-9

Nov 1966 64.9 AM3

Education, Pest control, Pesticides, Research.



# SUBJECT INDEX

- ABDOMEN**  
Spiracles of adult Scarabaeoidea (Coleoptera) and their phylogenetic significance. I. The abdominal spiracles. 9934
- ABSORPTION**  
Effect of temperature on water absorption, development, and hatching in eggs of the prairie grain wireworm, *Ctenicera destructor*. 9999  
Light intensity and the absorption and translocation of 2,4,5-T by woody plants. 10276  
Absorption and translocation of pyrazon by plants. 10287  
Absorption and penetration of picloram in potato tuber discs. 10308  
Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value. 10445
- ACACIA FARNESIANA**  
Chemical stimulation of ethylene evolution and bud growth. 10300
- ACANTHOCEPHALA**  
The development of the body wall of *Polymorphus minutus* (Acanthocephala) in its intermediate host *Gammarus pulex*. 10370  
Contribution to the research on the helminth fauna of wild birds in Thrace (southern Bulgaria) *Acanthocephala*. 10371
- ACARICIDES**  
Histological, behavioral, and symptomatic effects of Pentac on *Tetranychus urticae*. 10018  
Toxicity of selected acaricides to susceptible and resistant strains of *Tetranychus urticae* Koch. 10128  
European red mite and two-spotted spider mite control on apples in California. 10236  
Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries. 10248
- ACARINA**  
Mites of the super-family Gamasoidea on micromammalia in the western Balkan Range. 9911  
A study of the mites of the Gamasoidea super-family (Parasitiformes) infesting small mammals on the Vitosha Mountain. 10364
- ACCIDENT PREVENTION**  
Insecticides, how to use them safely and effectively. 10466
- ACER PALMATUM**  
Effects of several herbicides on yews and Japanese maples. 10280
- ACER PSEUDOPLATANUS**  
Spaced-out gregariousness in sycamore aphids *Drepanosiphum platanoides* (Schrank) (Homoptera: Callaphididae). 10050
- ACER RUBRUM**  
Effects of 2,4,5-T during the approach of woody plant dormancy. 10311
- ACETONE**  
An integrated technique to study the effects of fumigants on respiration of insects. 9972
- ACETYL-2-HYDRO-6-METHOXYDIFUROCOUMARONE, 1-**  
Reaction of aflatoxin B1 with acetic acid-thionyl chloride. 10481
- ACHATINA FULICA**  
Use of metaldehyde as dusts and sprays to control the giant African snail *Achatina fulica* Bowdich. 10319  
Observations on the control of *Achatina fulica* Bowdich, the giant African snail with methaldehyde. 10320  
Role of hermit crabs in the biological control of *Achatina fulica* (Bowdich) on the Andamans. 10321  
Gulella (Indoeneae) bicolor (Hutton), a predator of giant African snail *Achatina fulica* Bowdich. 10322  
ACIDS  
Method for repelling bees. patent 3,456,056. 10099
- ACLERIS VARIANA**  
Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests. 10257
- ACMOPOLYNEMA**  
New Mymaridae from Central Africa. (Hymenoptera: Chalcidoidea). 9916
- ACRIDIDAE**  
The external morphogenesis of grasshopper embryos. 9987  
Development of *Chrotogonus trachypterus* (Blanch.) (Orthoptera: Pyrgomorphidae) in relation to different levels of temperature and humidity. 10026  
Water uptake and embryonic development in eggs of *Chorthippus brunneus* Thunberg (Saltatoria: Acrididae). 10079
- ADENOSINE PYROPHOSPHATES**  
The utilization of C14-labelled adenosine diphosphate during the in vitro respiration of housefly sarcosomes. 9984
- ADIPOSE TISSUE (ANIMALS)**  
Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395
- ADSORPTION**  
Chemistry of herbicides. 10464
- Aedes Aegypti**  
Dioxane and dioxaspiro derivatives as attractants for male yellow-fever mosquitoes. 10023  
A more recent sensillary type on the antenna of female mosquitoes (*Aedes aegypti* L.). 10055  
Field observations on periodicity and site preference in oviposition by *Aedes aegypti* (L.) and related mosquitoes (Diptera: Culicidae) in Kenya. 10072
- Aedes nigromaculis**  
Anatomical indicators for assessing age of mosquitoes: changes in ovarian follicles. 10107
- Aedes seatoi**  
A new species of *Aedes* (*Stegomyia*) from Thailand (Diptera: Culicidae). 10164
- AERATION**  
Observations on prolonged grain storage with forced aeration in Israel. 10389
- AERIAL SPRAYING**  
Helicopter sprayers may rescue infested forests. 9959  
Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper. 10247
- AEROBACTER AEROGENES**  
Delayed lethal effect of 2,4-dichlorophenoxyacetic acid on bacteria. 10429
- AERODYNAMICS**  
Locust wind receptors. I. Transducer mechanics and sensory response. 9981  
Locust wind receptors. III. Contribution to flight initiation and lift control. 9982
- AFLATOXIN**  
Reaction of aflatoxin B1 with acetic acid-thionyl chloride. 10481
- AGAR**  
Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223
- AGING**  
Studies and suggestions on the behaviour of moths at light. 10033  
Age-distribution and abundance in populations of flour beetles. I. Experimental studies. 10071  
Anatomical indicators for assessing age of mosquitoes: changes in ovarian follicles. 10107  
Reversion of senescence: Effects of 2,4-dichlorophenoxyacetic acid and indoleacetic acid on respiration, ethylene production, and ripening of banana fruit slices. 10452
- AGRICULTURAL CHEMISTRY**  
The fungitoxic mechanisms in quinoline compounds and their chelates. 10202  
Mode of action of agricultural antibiotics developed in Japan. 10205
- AGRICULTURAL ENGINEERING**  
An evaluation of herbicide incorporation equipment. 10484
- AGRICULTURE**  
Chemical preparations in the services of agriculture and forestry. 10169
- AGROPYRON**  
Control of green rabbitbrush and big sagebrush with 2,4-D and picloram. 10310
- AGROSAN GN**  
Seed-mycoflora of musk-melon. 10193
- AIR**  
Analysis of grain storage problems in India. 10390  
Consequences of insecticide use of nontarget organisms. 10402
- AIR POLLUTION**  
Physiological and biochemical contribution to fume damage research. 8. Physiological investigations of the action of SO2 on the metabolism of conifer needles in winter. 10432
- AIR-BORNE PLANT DISEASES**  
*Heterobasidion annosum*. 10215  
*Phellinus igniarius*. 10216  
*Phellinus pomaceus*. 10217  
*Inonotus hispidus*. 10218
- ALDRIN**  
Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler. 10266  
Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395

# SUBJECT INDEX

## ALEYRODIDAE

- Industry's concern with pesticide residues. 10411
- Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value. 10445
- Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479

## ALEYRODIDAE

- Eretmocerus corni* Hald. (Hym., Aphelinidae), a parasite of *Siphoninus phillyreae* Halid. (Hom., Aleyrodidae). 10070

## ALFALFA

- Freeing alfalfa clones from alfalfa mosaic virus by heat treatment. 10185
- Effects of chlorpropham vapors on dodder seedlings. 10305
- The effects of two phytobland oils on the postemergence activity of bromoxynil and DNBP applied in two spray volumes in alfalfa. 10316
- Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa. 10480

## ALGAE

- Trapping of dieldrin lost from aqueous algae cultures. 10420

## ALLANTONEMATIDAE

- Description, biology, and importance of a new species of Allantonematidae (Nematoda), parasite of the aphidiphagous Coccinellidae: *Parasitylenchus coccinellinae*, n. sp. 10039

## ALLERGIES

- Allergic responses to insects. 10166
- Research on the effect of the entomophagous fungi *Beauveria bassiana* (bals.) Vuill. and *Metarrhizium anisopliae* (Metsch.) Sorok. on warm-blooded animals. 10353

## ALLOMORPHUS FRANZI

- Allomorphus franzi*, n. gen., n. spec. (Coleoptera, Curculionidae), a new species and genus from Austria. 8. Contribution to the knowledge of the Palearctic Cossoninae. 9891

## ALTERNARIA

- Chemistry of fungicides. 10476

## ALTERNARIA SOLANI

- Effect of CL-50, a new synthetic fungicide on certain fungi. 10173

## ALTERNARIA TENUIS

- Preliminary note on the occurrence of black point disease of wheat in India. 10228

## AMARANTHACEAE

- Tall waterhemp competition in grain sorghum. 10285

## AMARANTHIUS RETROFLEXUS

- Phytotoxicity of bemethylated analogs of diphenamid. 10290

## AMBLYOMMA AMERICANUM

- Oviposition and hatching in two species of ticks in relation to moisture deficit. 10119

## AMBROSIA

- Basis for selectivity of linuron on carrot and common ragweed. 10295

## AMIBEN

- Release rates and berhicial activity of slow release granular formulations. (abstract). 10459

## AMIDES

- Metabolism of organic pesticide chemicals in higher plants. 10278

## AMINO ACIDS

- Variations in free amino acids in the larvae and pupae of *Cbilo zonellus*. 9994

- A *Salmonella typhimurium* involved in the regulation of isoleucine, valine and leucine biosynthesis. 10326

## AMITROLE

- Effects of several herbicides on yews and Japanese maples. 10280

## AMMONIUM THIOCYANATE

- Effects of ammonium thiocyanate on carbohydrate metabolism in the cotton plant. 10455

## AMPHIPYRA BERBERA

- Amphipyra pyramidea* L. and *A. berbera* Rungs in Finland (Lepidoptera, Noctuidae). 9913

## AMPHIPYRA PYRAMIDEA

- Amphipyra pyramidea* L. and *A. berbera* Rungs in Finland (Lepidoptera, Noctuidae). 9913

## AMSACTA MOOREI

- Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler. 10266

## ANAGRUS

- New Mymaridae from Central Africa. (Hymenoptera: Chalcidoidea). 9916

## ANAGYRUS PSEUDOCOCCI

- Studies on an Israel strain of *Anagyrus pseudococci* (Girault) (Hym., Encyrtidae). II. Some biological aspects. 9964

## ANCYLOSTOMA CANINUM

- Notes on Parasitology: (A). Canine hookworm (*Ancylostoma caninum* (Ercolani 1859, Hall, 1913) and (B) Canine coccidiosis (*Eimeria canis*, Wenyon 1923). 10366

- Ancylostoma caninum*: Fine structure of intestinal epithelium. 10377

## ANDRENA

- Pollens collected by species of *Andrena* (Hymenoptera: Apidae). 9986

## ANILIDES

- Metabolism of organic pesticide chemicals in higher plants. 10278

## ANIMAL DISEASES

- Toxoplasma gondii*: Isolation of samples starting from the diaphragms of clinically healthy pigs slaughtered in Sao Paulo, Brazil. 10327

- Bloat on *Dolichos lablab*. 10335

- Eimeria tenella* schizonts and merozoites in macrophages as shown by electron microscopy. 10354

- The effect of gastro-intestinal secretions on taeniid egg membranes. 10374

- Spirurata of animals and humans and the diseases. 10382

## ANIMAL EXTRACTS

- Analytical studies on extracts of *Litosomoides carinii*. 10341

- Gas chromatographic determination of residues of Dalapon in several substrates. 10410

- Extraction, separation, and GLC detection of silvex and its propylene glycol ether ester in fish tissue. 10421

- Collaborative, study of the sweep co-distillation cleanup for chlorinated pesticide residues in edible fats and oils. 10472

## ANIMAL GENETICS

- Mutagenic effects of TEPA and METEPA in mice. 10333

## ANIMAL HISTOLOGY

- Case of rabies in guinea pig with long incubation period. 10348

## ANIMAL METABOLISM

- Degradation and disappearance of ortho, para isomer of technical DDT in living and dead avian tissues. 10425

- The in vitro metabolism of organophosphorus insecticides by tissue homogenates from mammal and insect. 10426

## ANIMAL NUTRITION

- Bloat on *Dolichos lablab*. 10335
- Official proceedings. Second annual Pacific Northwest Animal Nutrition Conference, at Pacific Science Center, Seattle, Washington, November 9-10, 1967. 10350

## ANIMAL PHYSIOLOGY

- Physico-organic chemical approach to the mode of action of organophosphorus insecticides. 10014

- On the effect of molds on various animal species. Part 2. 10343

- Uptake of dieldrin by isolated perfused gills of rainbow trout. 10408

- Endrin induced alterations in hound carbohydrates in rat serum. 10423

- The difference in sensitivity to the sterilizing action of O,O-dichthyl-O-paranitrophenyl thiophosphate of the embryonic testicles of quails and chickens in in vitro culture. 10430

## ANIMALS

- Ixodes pacificus* Cooley and Kohls, 1943: Its life-history and occurrence. 9962

- On the effect of molds on various animal species. Part 2. 10343

- Consequences of insecticide use of nontarget organisms. 10402

## ANTENNAE

- A more recent sensillary type on the antenna of female mosquitoes (*Aedes aegypti* L.). 10055

## ANTHELMINTICS

- The course of naturally acquired helminth infections of horses given regular anthelmintic treatment. 10380

## ANTHOMYIIDAE

- Biology and description of immature stages of *Orthacheta hirtipes*, a predator of *Cordilura* spp. 10080

- Atherigona* sp. (Anthomyiidae: Diptera) as a pest of wheat in Rajasthan. 10250

## ANTHONOMUS GRANDIS

- The behavior of newly emerged boll weevils. 10016

- Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans *Glugea gastri* and *Mattesia grandis*. 10068

- Damage to testes and recovery of fertility in boll weevils fed chemosterilants. 10100

- Growers join forces to battle the boll weevil. 10233



- Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper. 10247
- ANTHOPHORINAE**  
Biological notes on the bee *Tetralonia minuta* and its cleptoparasite, *Morgania histrio transvaalensis* (Hymenoptera: Anthophoridae). 10109
- ANTIBIOTICS**  
Fungicidal control of rice diseases. 10170  
Mode of action of agricultural antibiotics developed in Japan. 10205  
Tetracycline antibiotic compositions for oral use. Patent 3,454,697. 10337  
Medical and veterinary chemicals. Vol. I, parts I and II. 10355
- ANTIBODIES**  
Vitellogenic blood protein synthesis by insect fat body. 10083  
Control method of inactivated vaccines against the Newcastle disease by means of the titulation of neutralizing antibodies. 10334  
The isolation of a strain of *Leptospira* serotype hardjo, from cattle in Queensland. 10358
- ANTISEPTICS**  
Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223
- AONIDIELLA AURANTII**  
Marking and recapture of California red scale for field studies. 10101
- APANTELES CHILONIS**  
Biology of *Apanteles chilonis* and *A. flavipes* (Hymenoptera: Braconidae), parasites of *Chilo suppressalis*. 10045
- APANTELES FLAVIPES**  
Biology of *Apanteles chilonis* and *A. flavipes* (Hymenoptera: Braconidae), parasites of *Chilo suppressalis*. 10045
- APHELINIDAE**  
A new species of *Mesidia* (Hymenoptera: Aphelinidae) from California. 9914  
An interesting case of adaptation to various hosts on the part of an egg parasite. 9985  
Deviate-ontogenies in the aphelinid male (Hymenoptera) associated with the ovipositional behavior of the parental female. 10006  
*Eretmocerus corni* Hald. (Hym., Aphelinidae), a parasite of *Siphoninus phillyreae* Halid. (Hom., Aleyrodidae). 10070
- APHIDIDAE**  
Aphid fauna of Macedonia. 9943  
Local lesion host for grassy shoot virus of sugarcane. 10224
- APHIS GOSSYPH**  
Efficiency of three colonies of melon aphids as transmitters of Tristeza virus. 10258
- APHYTIS**  
The colonization and success in Greece of some imported *Aphytis* spp. (Hym. Aphelinidae) parasitic on citrus scale insects (Hom. Diaspididae). 10241
- APHYTIS HOLOXANTHIUS**  
Control of Florida red scale in Florida with the parasite *Aphytis holoxanthus*. 10264
- APICULTURE**  
Studies on brood rearing activity of Indian honey bee *Apis indica* F. under Delhi conditions. 9974
- APIDAE**  
Bees as pests. 10244
- APIS INDICA**  
Studies on brood rearing activity of Indian honey bee *Apis indica* F. under Delhi conditions. 9974  
Studies on phosphohexoseisomerase (d-glucose-6-phosphate ketol isomerase) from the Indian honeybee, *Apis indica* Fabricius. 10098
- APIS MELLIFERA**  
Experimental infections with *Bacillus* larvae. I. A strain with a morphological marker. 10020  
Proteins in the spermathecae and haemolymph of the queen bee (*Apis mellifica* L. var. *ligustica* Spin.). 10057  
Seasonal evolution of the honey bee thermogenesis. Oxygen consumption of the isolated bee at five different temperatures in summer and in winter. 10123  
Variability in insecticide tolerance of eighteen honey-bee colonies. 10125
- APPLES**  
European red mite and two-spotted spider mite control on apples in California. 10236  
The effect of N-dimethyl amino succinic acid (Alar) on size, shape and maturity of Delicious apples. 10450  
Effects of gibberellin A3 on fruit shape and subsequent seed dormancy of apple. 10453
- AQUATIC ANIMALS**  
DDT in fats on Antarctic animals. 10405
- AQUATIC BIRDS**  
The comparative pathology of duck plague in wild Anseriformes. 10342
- AQUATIC INSECTS**  
Presentation of aquatic heteropteran fauna II, aquatic Heteroptera from Evora, Portugal. 9922  
The life histories and drifting of the Plecoptera and Ephemeroptera in a dartmoor stream. 10001  
Aquatic insect communities of a small stream on Mont St. Hilaire, Quebec. 10060
- AQUATIC PLANTS**  
Control of aquatic plants with dithiodidecanic acid. Patent 3,432,286. 10281  
Effects of growth regulators and herbicides on germination of *Hydrilla* turions. 10306  
Observations on the decline of water milfoil and other aquatic plants, Maryland, 1962-1967. 10393  
Water florae as indicators of irrigation water contamination by DDT. 10403  
A survey of the chemical composition of Potamogeton and Myriophyllum in New Jersey. 10448
- AQUATIC WEEDS**  
Observations on the decline of water milfoil and other aquatic plants, Maryland, 1962-1967. 10393
- ARACHNIDA**  
*Thomisus onustus* Walck. (Arachnida) recorded in error from Thursley Common Surrey. 9895
- ARANEIDA**  
Observations on the life history and bionomics of *Oligotoma ceylonica ceylonica* Enderlein (Oligotomidae, Embioptera), commensal in the nest of the social spider *Stegodyphus sarasinorum* Karsch. 9978
- ARCTIIDAE**  
The tiger moths of the county of Cumberland, New South Wales. 9900
- ARGAS**  
The subgenus *Persicargas* (Ixodoidea, Argasidae, Argas). 7. *A. (P.) walkerae*, new species, a parasite of domestic fowl in southern Africa. 9908
- ARGINASE**  
Arginine metabolism in *Ascaris lumbricoides*. Activity of arginine carboxylase and arginase. 10379
- ARGYROTAENIA VELUTINANA**  
Sterol and water-soluble requirements for larvae of the red-banded leaf roller, *Argyrotaenia velutinana*. 10104
- ARTEMISIA TRIDENTATA**  
Downy brome control by soil-active herbicides for revegetation of rangelands. 10283  
Control of green rabbitbrush and big sagebrush with 2,4-D and picloram. 10310
- ARTHROPODA**  
Radiation sensitivity of twelve species of arthropods. 10069  
Structure, stability, and energy flow in plants and arthropods in a sericea *Lespedeza* stand. 10255  
The development of the body wall of *Polymorphus minutus* (Acanthocephala) in its intermediate host *Gammarus pulex*. 10370
- ASCARIS**  
Pyruvate kinase and phosphoenolpyruvate carboxylase activities of *Ascaris* muscle, *Hymenolepis diminuta* and *Schistosoma mansoni*. 10369
- ASCARIS LUMBRICOIDES**  
Arginine metabolism in *Ascaris lumbricoides*. Activity of arginine carboxylase and arginase. 10379
- ASCARIS LUMBRICOIDES SUUM**  
Studies on lipid metabolism of *Ascaris* during starvation. 10368
- ASCORBIC ACID**  
Effect of manganese and cobalt on ascorbic acid metabolism in rats. 10352
- ASILIDAE**  
The family Leptogastridae (Diptera). 9927
- ASPERGILLIOSIS**  
Problems in raising ducks. 10357
- ASPERGILLUS**  
Seed-mycoflora of musk-melon. 10193
- ASPERGILLUS NIGER**  
Effect of CL-50, a new synthetic fungicide on certain fungi. 10173  
Toxic metabolite of *Aspergillus niger* and its role in onion rot disease. 10208  
On the effect of molds on various animal species. Part 2. 10343

# SUBJECT INDEX

- ASPERMY**  
A new tomato virus found in the Estonian SSR (Aspermy-virus). 10187
- ASPIDIOTUS**  
The identification and distribution of *Quadraspidiotus* species (Homoptera: Diaspididae) on pome and stone fruits in Australia. 9876
- ASPIDIOTUS PYRI**  
Note on *Prospaltella aurantii* How. (Hym., Aphelinidae), parasite of *Quadraspidiotus pyri* Licht. in the Matitime Alps (Hom., Diaspididae). 9967
- ASTRAGALUS MISER**  
Distribution of miserotoxin in varieties of *Astragalus miser* Dougl. ex Hook. 10454
- ATHALIA PROXIMA**  
Effect of temperature on the development of mustard sawfly, *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 9976  
Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug. at seedling stage. 10251  
Discovery of sinigrin as a phagostimulant by *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 10433
- ATRAZINE**  
Downy brome control by soil-active herbicides for revegetation of rangelands. 10283  
Influence of atrazine (2-chloro-4-ethylamino-6-isopropylamino-5-triazine) on auxin metabolism of plants. 10434  
Atrazine degradation in two soil profiles. 10477
- ATTRACTANTS**  
Dioxane and dioxaspiro derivatives as attractants for male yellow-fever mosquitoes. 10023  
Hexalure, an insect sex attractant discovered by empirical screening. 10025  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032  
Sex attractant of female dermestid beetle *Trogoderma inclusum* Le Conte. 10105  
New approaches to the control of pest organisms. 10118
- AUTORADIOGRAPHY**  
Meiosis in the grasshopper: Chiasma frequency after elevated temperature and X-rays. 10151
- AZALEA**  
Colchicine-induced tetraploid azaleas. 10447
- AZINPHOSMETHYL**  
Growers join forces to battle the holl weevil. 10233  
Biology and control of leopard moth on pear trees in the United Arab Republic. 10242  
Easy-to-kill pests of fruit trees...codling moth. 10253
- BABESIA ARGENTINA**  
*Babesia argentina*: Serum changes in infected calves. 10345
- BABESIA BIGEMINA**  
Fine structures of merozoites of *Babesia bigemina* in the ovaries of *Boophilus microplus* and *Boophilus decoloratus*. 10012
- BABESIA OVIS**  
Microscopical studies on the development of *Babesia ovis* in *Rhipicephalus bursa* (Ixodoidea). I. Development in female ticks after repletion. 10013
- BABY PIGS**  
Ontogeny of the immune response. V. Further characterization of 19 S gamma G- and 7 S gamma G-immunoglobulins in the true primary immune response in germfree, colostrum-deprived piglets. 10340
- BACILLUS LARVAE**  
Experimental infections with *Bacillus* larvae. I. A strain with a morphological marker. 10020
- BACILLUS POPILLIAE**  
Course of sporulation of *Bacillus popilliae* in liquid medium containing activated carbon. 10029  
Survival of lyophilized *Bacillus popilliae* in soil. 10415
- BACILLUS THURINGIENSIS**  
Symposium on the principles of the application of microbiological preparations in nature. 10249  
Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests. 10257  
Preliminary studies on the integrated control of the pest complex on cowpea, *Vigna unguiculata* Walp., in Nigeria. 10268
- BACTERIA**  
Immune reaction in insects. I. Lysozyme as the fundamental antibacterial factor in the humoral preventive mechanism of the insects. 10077
- BACTERIAL DISEASES (INSECTS)**  
Course of sporulation of *Bacillus popilliae* in liquid medium containing activated carbon. 10029
- BACTERIAL DISEASES (PLANTS)**  
Response to parasites. 10232  
Treated water curbs tomato decay. 10384
- BACTERICIDES**  
Immune reaction in insects. I. Lysozyme as the fundamental antibacterial factor in the humoral preventive mechanism of the insects. 10077  
Method for combating micro-organisms. Patent 3,458,636. 10362  
N-(substituted-benzoyl) aminoaceto- and aminopropionitriles. Patent 3,457,294. 10460
- BAGASSE**  
Notice of filing of petition for food additives. 10417
- BAITS**  
Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans *Glugea gasti* and *Mattesia grandis*. 10068  
Observations on the control of *Achatina fulica* Bowdich, the giant African snail with methyldi- 10320
- BANANAS**  
Reversion of senescence: Effects of 2,4-dichlorophenoxyacetic acid and indoleacetic acid on respiration, ethylene production, and ripening of banana fruit slices. 10452
- BARLEY**  
Control of barley loose smut in Wisconsin in 1966 and 1967. 10171  
Chemical control of loose smut in barley in Minnesota. 10174
- Post-infection changes in the sugar content of leaf-spot infected barley. 10178
- Chemotherapy of loose smut of barley in Canada. 10179
- A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum. 10189
- Effect of chemical treatments on the control of. 10191
- Control of loose smut of wheat and barley in Arkansas with fungicides. 10192
- Chemical control of wheat and barley loose smut. 10194
- Effectiveness of fungicides in controlling barley loose smut. 10196
- Efficacy of oxathiin fungicides for control of loose smut in barley. 10199
- Preliminary observations on the treatment of wheat and barley with a fungicide to control loose smut in England. 10200
- Chemical control of loose smut in barley. 10214
- The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl-4-oxathiin. 10222
- Seed treatment trial, 1967. 10229
- Comparative efficiency of transmission of aster yellows by *Elymana virescens* and *Macrostele fasciifrons* and the relative concentration of the causal agent in the vectors. 10238
- BATHS**  
Foot lameness in pigs. 10332
- BATS**  
Rabies diagnosis. Observations on strains of virus with low pathogenicity. 10349
- BEANS**  
New record of *Chenopodium fallax* Scott. (Hemiptera: Lygaeidae) on moong and urid (*Phaseolus* spp.). 10097  
Survival of root-infecting fungi in soil. XII. Germination and survival of endoconidia and chlamydospores of *Thielaviopsis basicola* in fallow soil and in soil adjacent to germinating bean seed. 10213
- BEARS**  
Metabolism of strychnine nitrate applied for the control of the bear. 10318
- BEAUVERIA BASSIANA**  
Research on the effect of the entomophagous fungi *Beauveria bassiana* (bals.) Vuill. and *Metarrhizium anisopliae* (Metsch.) Sorok. on warm-blooded animals. 10353
- BEE VENOM**  
Action of honey bee venom on development of epithelial cellular cultures of monkey's kidneys. 9997
- BEEES**  
Method for repelling bees. patent 3,456,056. 10099
- BENOMYL**  
Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium* wilt with Thiabendazole and Benlate. 10181
- BENTONITE**  
Use of inert particles for the diagnosis of sheep cisticercosis. Bentonite test. 10367



- Recent techniques for serodiagnosis of hydatidosis. V. The importance of tests of bentonite, latex and indirect hemagglutination in the field sanitation of hidatidosis. 10372
- BENZENE HEXACHLORIDE**  
Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides. 10043  
Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler. 10266
- BIBLIOGRAPHY**  
Temperature effects on embryonic development in insects. 10035  
Allergic responses to insects. 10166  
List of publications on fungus and insect defects in forest products. 10182  
Response to parasites. 10232  
Mechanisms of action of herbicides. 10299  
On the effect of molds on various animal species. Part 2. 10343  
Arginine metabolism in *Ascaris lumbricoides*. Activity of arginine carboxylase and arginase. 10379  
Consequences of insecticide use of nontarget organisms. 10402  
Plant growth regulators. 10436
- BINAPACRYL**  
Toxicity of selected acaricides to susceptible and resistant strains of *Tetranychus urticae* Koch. 10128
- BIOCHEMISTRY**  
A molecular approach to the study of genic heterozygosity in natural populations. IV. Patterns of genic variation in central, marginal and isolated populations of *Drosophila pseudoobscura*. 10159  
Vitamin A metabolism in protein deficiency. 10324  
A *Salmonella typhimurium* involved in the regulation of isoleucine, valine and leucine biosynthesis. 10326  
Operator constitutive mutations in the leucine operon of *Salmonella typhimurium*. 10329  
Analytical studies on extracts of *Litomosoides carinii*. 10341  
Pyruvate kinase and phosphoenolpyruvate carboxykinase activities of *Ascaris muscle*, *Hymenolepis diminuta* and *Schistosoma mansoni*. 10369  
On the environment of *Polymorphus minutus* (*Acanthocephala*) in ducks. 10373  
The fine structure and method of feeding of the tissue parasitizing stages of *Histomonas meleagridis*. 10378  
Arginine metabolism in *Ascaris lumbricoides*. Activity of arginine carboxylase and arginase. 10379  
Specificity and mechanism in the action of saligenin cyclic phosphorus esters. 10424  
Reactions of pesticides in soils. 10468  
The insecticides; chemistry, mode of action, and toxicity. 10474
- BIODEGRADATION**  
Biodegradation of pesticides. 10422
- BIOLOGICAL ASSAY**  
Estimation and dissipation of parathion residue from the crop of Indian rape seed. 10048  
Biological interaction between plasticizers and insecticides. 10058  
Sex attractant of female dermestid beetle *Trogoderma inclusum* Le Conte. 10105  
Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium wilt* with Thiabendazole and Benlate. 10181  
Toxic metabolite of *Aspergillus niger* and its role in onion rot disease. 10208  
Local lesion host for grassy shoot virus of sugarcane. 10224  
Metabolism of trifluralin in peanuts and sweet potatoes. 10273  
Herbicide screening tests during 1967 in agricultural crops and potted herbs. 10307  
Accurately predicting a herbicides potential. 10313  
Case of rabies in guinea pig with long incubation period. 10348
- BIOLOGICAL CONTROL (INSECTS)**  
Helicopter sprayers may rescue infested forests. 9959  
Note on *Prospaltella aurantii* How. (Hym., Aphelinidae), parasite of *Quadraspidiotus pyri* Licht. in the Matitime Alps (Hom., Diaspidinae). 9967  
Biology of *Apanteles chilonis* and *A. flavipes* (Hymenoptera: Braconidae), parasites of *Chilo suppressalis*. 10045  
Insect parasites of the green peach aphid, *Myzus persicae* Sulz. and their control potential. 10059  
Laboratory and field experiments on the effectiveness of purified and non-purified nuclear polyhedral virus of *Lymantria dispar* L.. 10061  
Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans *Glugea gasti* and *Mattesia grandis*. 10068  
Nematode parasites of the face fly and the onion maggot in France and Denmark. 10120  
The effect of *Perillus bioculatus* (Fabr.) (Het., Pentatomidae) on the population dynamics of the potato beetle. 10124  
The colonization and success in Greece of some imported *Aphytis* spp. (Hym. Aphelinidae) parasitic on citrus scale insects (Hom. Diaspididae). 10241  
Symposium on the principles of the application of microbiological preparations in nature. 10249  
Biological control of olive scale, *Parlatoria oleae* (Colvee), in a deciduous fruit orchard in California. 10252  
The first large-scale experimentation with the biological control of the olive fly (*Dacus oleae* Gmel.) by means of *Opius concolor* Szepi. siculus Mon. in Sicily. 10256  
Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus*
- thuringiensis. II. Laboratory and field pathogenicity tests. 10257  
Notes and considerations on the control of the cypress moth, *Catoria unipennaria* (Guen.) (Lepidoptera, Geometridae). 10261  
Control of Florida red scale in Florida with the parasite *Aphytis holoxanthus*. 10264  
Biological studies in Ghana in the control of *Cadra cautella* (Wlk.), the tropical warehouse moth. 10391
- BIOLOGICAL CONTROL (PESTS)**  
Role of hermit crabs in the biological control of *Achatina fulica* (Bowdich) on the Andamans. 10321  
*Gulella* (*Indoeneea*) *bicolor* (Hutton), a predator of giant African snail *Achatina fulica* Bowdich. 10322
- BIOLOGICAL CONTROL (WEEDS)**  
Biological control of *Cuscuta* spp. II. Biology and host-plant range of *Melanagromyza cuscutae* Hering (Dipt. Agromyzidae). 10272
- BIOLOGY**  
Description, biology, and importance of a new species of Allantonematidae (Nematoda), parasite of the aphidiphagous Coccinellidae: *Parasitylenchus coccinellinae*, n. sp. 10039  
On the environment of *Polymorphus minutus* (*Acanthocephala*) in ducks. 10373  
The fine structure and method of feeding of the tissue parasitizing stages of *Histomonas meleagridis*. 10378
- BIONOMICS**  
The stem borer *Sesamia botanophaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243
- BIOPHYSICS**  
Physico-chemical and biophysical factors affecting the activity of pesticides. 10462
- BIPHENYL COMPOUNDS**  
Biological interaction between plasticizers and insecticides. 10058
- BIRD RAPE**  
Estimation and dissipation of parathion residue from the crop of Indian rape seed. 10048
- BIRDS**  
The parasitism of gamasid mites (*Gamasoidea*) on birds. 10145  
Records of pupiparous Diptera (*Hippoboscidae*) on birds in India--III. 10365  
Contribution to the research on the helminth fauna of wild birds in Thrace (southern Bulgaria) *Acanthocephala*. 10371  
Eggs and chlorinated hydrocarbons. 10394  
Consequences of insecticide use of nontarget organisms. 10402  
Peacock plasma, a useful cholinesterase source for inhibition residue analysis of insecticidal carbamates. 10419  
Degradation and disappearance of ortho, para isomer of technical DDT in living and dead avian tissues. 10425

# SUBJECT INDEX

## BIS(TRIFLUOROMETHYL)-3,4-DIFLUOROXYTENE, 2,2-

**BIS(TRIFLUOROMETHYL)-3,4-DIFLUOROXY-  
ETENE, 2,2-**  
Method for combating micro-organisms. Patent  
3,458,636.

10362

**BIS-(TRIMETHYLSILYL)ACETAMIDE, N,O**  
Gas chromatographic method for determination  
of diethylstilbestrol in feeds.

10356

## BISSETIA STENIELLUS

Contribution to the knowledge of the natural  
enemies of *Bissetia steniellus* (Hampson) (Lep.:  
Pyralidae).

10254

## BLABERIDAE

Three new species of genus *Blaptica*, Stal, 1874  
(Diptera, Blaberidae of the Republic of Ar-  
gentina).

9903

## BLACKHEAD

Transmission of histomoniasis with male  
*Heterakis gallinarum* (Nematoda).

10383

## BLAST

Fungicidal control of rice diseases.

10170

## BLATTA ORIENTALIS

Radiation sensitivity of twelve species of  
arthropods.

10069

## BLATTARIA

Neotropical cockroaches of the *Epilampra* ab-  
domennigrum complex; a clarification of their  
systematics (Diptera, Blattaria).

9935

Spermatophores of the Blattaria.

10024

## BLATTELLA GERMANICA

Radiation sensitivity of twelve species of  
arthropods.

10069

## BLIGHT

A systemic oxathiin fungicide to control loose  
smuts, covering smuts, seed rots, and seedling  
blights of wheat, barley, oats, and sorghum.

10189

## BLOAT

Bloat on *Dolichos lalrah*.

10335

## BLOOD

Immune reaction in insects. I. Lysozyme as the  
fundamental antibacterial factor in the humoral  
preventive mechanism of the insects.

10077

## BLOOD PLASMA

Peacock plasma, a useful cholinesterase source  
for inhibition residue analysis of insecticidal car-  
bamates.

10419

## BLOOD PROTEINS

A simple starch-gel electrophoretic method to  
investigate esterase inhibition by common or-  
ganic insecticides.

10044

Vitellogenic blood protein synthesis by insect fat  
body.

10083

## BLOOD SERUM

Endrin induced alterations in bound car-  
bohydrates in rat serum.

10423

## BLUETONGUE

Incidence of bluetongue reported calendar year  
1967.

10325

## BOOPHILUS DECOLORATUS

Fine structures of merozoites of *Babesia*  
*bigemina* in the ovaries of *Boophilus microplus*  
and *Boophilus decoloratus*.

10012

## BOOPHILUS MICROPLUS

Fine structures of merozoites of *Babesia*  
*bigemina* in the ovaries of *Boophilus microplus*  
and *Boophilus decoloratus*.

10012

## BOTULISM

Problems in raising ducks.

10357

## BOVICOLA

In vitro colonization of the goat biting lice,  
*Bovicola crassipes* and *B. limbata*.

10034

## BRACHYRHINUS CRIBRICOLLIS

Control of *Brachyrhinus cribricollis* injuring or-  
namentials.

10269

## BRACONIDAE

*Meteorus versicolor* Wesm. var. *decoloratus*  
Ruthe (Hym., Braconidae), a new parasite of  
*Tbaumetopoea pityocampa* Schiff. (Lep., Thau-  
metopocidae).

9980

New parasite records on *Hymenia recurvalis*  
(Fabricius) (Lepidoptera: Pyralidae).

10087

Contribution to the knowledge of the natural  
enemies of *Bissetia steniellus* (Hampson) (Lep.:  
Pyralidae).

10254

## BRAIN

The ultrastructure of the brain of the insect  
*Notonecta glauca* L.

10042

## BRASSICA

Treatment of mustard and radish seeds for the  
control of mustard sawfly, *Athalia proxima* Klug.  
at seedling stage.

10251

Behavior of pyrazon in soil.

10286

## BREVICORYNE BRASSICAE

The effect of removal of arthropod predators on  
an infestation of *Brevicoryne brassicae* (Hemip-  
tera, Aphididae) on brussels sprouts.

10260

## BROMACIL

African feather grass--a weed worth watching.

10279

Control of johnsongrass on drainage ditchbanks  
in sugarcane.

10297

## BROMOPHOS

Degradation of p32-bromophos by microorgan-  
isms and seedlings.

10449

## BROMOXYNIL

The effects of two phytobland oils on the  
postemergence activity of bromoxynil and DNBP  
applied in two spray volumes in alfalfa.

10316

## BROMUS TECTORUM

Downy home control by soil-active herbicides  
for revegetation of rangelands.

10283

## BRUSH CONTROL

Growing Christmas trees on a power line right-  
of-way.

10485

## BRUSSELS SPROUTS

The effect of removal of arthropod predators on  
an infestation of *Brevicoryne brassicae* (Hemip-  
tera, Aphididae) on brussels sprouts.

10260

## BUPRESTIDAE

New species of *Chrysobothris* from the Pacific  
Northwest (Coleoptera: Buprestidae).

9870

## CACODYLIC ACID

Response of tropical vegetation to herbicides.

10275

## CADRA CAUTELLA

Biological studies in Ghana in the control of  
*Cadra cautella* (Wlk.), the tropical warehouse  
moth.

10391

## CALLAPHIDIDAE

Spaced-out gregariousness in sycamore aphids  
*Drepanosiphum platanoides* (Schränk) (Hemip-  
tera, Callaphididae).

10050

## CALLIPHORA

Effects of exogenous moulting hormones on pu-  
parium formation in *Calliphora*.

10130

## CALLIPHORA VICINA

Sindbis virus multiplication and *Calliphora*  
*erythrocephala* (Meig.) metamorphosis.

9969

## CALVES

*Babesia argentina*: Serum changes in infected  
calves.

10345

## CANDIDA ALBICANS

Survey of yeastlike fungi and tissue changes in  
esophagogastric region of stomachs of swine.

10339

## CANKER

Elements for the differentiated application of  
quarantine and control measures of potato  
canker.

10221

## CAPTAN

Chemical control of loose smut in barley.

10214

Chemistry of fungicides.

10476

## CARABIDAE

The insect predators of the pupal stage of the  
winter moth, *Operophtera brumata* (L.)  
(Lepidoptera: Hydrimenidae).

10009

The effect of pupal predators on a population of  
winter moth, *Operophtera brumata* (L.)  
(Hydrimenidae).

10010

On the explosion chemistry of the bombardier  
beetle. Vi. On the chemistry of the smallest bom-  
bardier beetle *Pausus faviieri*. XLIII. Communi-  
cation on arthropod protective substances.

10111

Experiments on larval diapause in the carabid  
*Pterostichus vulgaris* L.

10129

## CARBAMATES

Compositions and methods for regulating the  
growth of plants. Patent 3,455,673.

10021

Studies on the susceptibility of different stages of  
*Bagrada cruciferarum* Kirkaldy to some organic  
insecticides.

10043

Toxicity of selected acaricides to susceptible and  
resistant strains of *Tetranychus urticae* Koch.

10128

Spray droplet size in the control of spruce bud-  
worm, boll weevil, bollworm and cabbage  
looper.

10247

Easy-to-kill pests of fruit trees...codling moth.

10253

Control of *Brachyrhinus cribricollis* injuring or-  
namentials.

10269

Metabolism of organic pesticide chemicals in  
higher plants.

10278

Pesticides and clay minerals.

10397

Peacock plasma, a useful cholinesterase source  
for inhibition residue analysis of insecticidal car-  
bamates.

10419

Chemistry of insecticides.

10463

Chemistry of herbicides.

10464

Insecticides, how to use them safely and effec-  
tively.

10466

Rapid method for the extraction, cleanup, and  
GLC determination of toxic residues of temik.

10471

Chemistry of fungicides.

10476



- CARBARYL**  
Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides. 10043  
Biology and control of leopard moth on pear trees in the United Arab Republic. 10242  
Easy-to-kill pests of fruit trees...codling moth. 10253  
Control of *Brachyrhinus cribricollis* injuring ornamentals. 10269  
Acetonitrile extraction and determination of carbaryl in fruits and vegetables. 10475
- CARBOHYDRATES**  
Translocation of assimilates and dalapon in established johnsongrass. 10292  
Endrin induced alterations in bound carbohydrates in rat serum. 10423
- CARBON**  
Nutrition of the silver-leaf pathogen *Stereum purpureum* (Pers.) Fri. 10175
- CARBON DIOXIDE**  
Studies on lipid metabolism of *Ascaris* during starvation. 10368
- CARBON-14**  
Atrazine degradation in two soil profiles. 10477
- CARBONATES**  
Toxicity of selected acaricides to susceptible and resistant strains of *Tetranychus urticae* Koch. 10128
- CARBOXYLASES**  
Arginine metabolism in *Ascaris lumbricoides*. Activity of arginine carboxylase and arginase. 10379
- CARBOXYLESTERASE**  
Degradation and anticholinesterase activity of disulfoton and phorate after <sup>60</sup>Co gamma irradiation. 10465
- CARROTS**  
Basis for selectivity of linuron on carrot and common ragweed. 10295
- CASSIA OBTUSIFOLIA**  
EPTC effects on sicklepod petiolar fatty acids. 10315
- CATALOGS**  
List of insect and other invertebrate types in the Miguel Lillo Institute. (3rd list). 9902  
A supplementary list of the host-plants of lace insects. 10135
- CATTLE**  
Vaccinated cattle.....can harbor foot and mouth disease. 10331  
Bloat on *Dolichos lablab*. 10335  
The relative incidence of *Vibrio fetus* infection in dairy and beef cattle in New South Wales. 10336  
The occurrence of ephemeral fever of cattle in Victoria in 1968. 10347  
The isolation of a strain of *Leptospira*, serotype hardjo, from cattle in Queensland. 10358  
The incidence of demodectic mites in the eyelids of various mammalian hosts. 10363
- CECIDOMYIIDAE**  
A note on the occurrence of fruit fly maggots of *Dacus cucurbitae* Coq. in cecidomyiid galls of *Coccinia indica* in Andhra Pradesh. 9998
- CELLS**  
Changes in chromosomes induced by different DNA virus in cells of *Rhynchosciara angelae*. 10158  
Immune lysis of rabies virus-infected cells. 10361  
Cell physiology investigations of the action of new triazine derivatives on petiole epidermis of *Solanum tuberosum* L. 10431
- CENTRIFUGATION**  
Interaction between chronic irradiation, vibration, and centrifugation in the production of genetic effects in *Drosophila*. 10148
- CENTRODORA ITALICA**  
An interesting case of adaptation to various hosts on the part of an egg parasite. 9985
- CERAMBYCIDAE**  
An interesting case of adaptation to various hosts on the part of an egg parasite. 9985  
A killing agent for use in light traps. 10090  
The effect of removal of arthropod predators on an infestation of *Brevicoryne brassicae* (Homoptera, Aphididae) on brussels sprouts. 10260
- CERAPHRONIDAE**  
Description of *Dendrocercus* (tmaerostigma) noumeae sp. nov. from New Caledonia (Ceraphronoidea, Megaspilidae). 9885
- CERATITIS CAPITATA**  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032
- CERATOCYSTIS FIMBRIATA**  
Biochemical studies on the terpene metabolism in sweet potato root tissue with black rot. Effect of C10- and C15-terpenols on acetate-2-<sup>14</sup>C incorporation into ipomeamarone. 10446
- CERATOPOGONIDAE**  
Description of the male, pupa, and larval habitat of *Nilobezzia brevicornis* (Diptera: Ceratopogonidae). 9963
- CEROPLASTES**  
A comparative biological study of three ceroplastes species (Hem. Coccidae) and their natural enemies. 9990
- CHEMICAL ACTIVATION**  
The correlation between physiological activity and physicochemical property of the substituted phenols. 10437
- CHEMICAL ANALYSIS**  
Variations in free amino acids in the larvae and pupae of *Chilo zonellus*. 9994  
Proteins in the spermathecae and haemolymph of the queen bee (*Apis mellifica* L. var. *ligustica* Spin.). 10057  
Sex attractant of female dermestid beetle *Trogoderma inclusum* Le Conte. 10105  
Refined defensive mechanisms in *Chrysomela scripta*. 10139  
Gas chromatographic method for determination of diethylstilbestrol in feeds. 10356  
GLC determination of residues of disulfoton, oxydemetonmethyl, and their metabolites in tobacco plants. 10404  
Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods. 10409
- Gas chromatographic determination of residues of Dalapon in several substrates. 10410  
Extraction and gas-liquid chromatographic determination of vernolate in soil. 10412  
Activation and standardization of purified silica gel for column chromatographic cleanup of pesticide residue extracts. 10414  
Analysis of grains for multiple residues of organic fumigants. 10416  
Peacock plasma, a useful cholinesterase source for inhibition residue analysis of insecticidal carbamates. 10419  
Trapping of dieldrin lost from aqueous algae cultures. 10420  
Extraction, separation, and GLC detection of silvex and its propylene glycol ether ester in fish tissue. 10421  
A survey of the chemical composition of Potamodgeton and Myriophyllum in New Jersey. 10448  
Distribution of miserotoxin in varieties of *Astragalus miser* Dougl. ex Hook. 10454  
Gas chromatographic determination of ethyl O,O-dimethyldithiophosphoryl-1-phenyl acetate in technical grade cidal and its 50 percent liquid formulation. 10457  
Gas chromatographic characteristics of chlordane. I. Effect of an aqueous environment on the heptachlor component. 10458  
Thin layer densitometric determination of rotenone and deguelin. 10461  
Review of methods for mercury in pesticide formulations. 10469  
Comparison of ten methods for the analysis of milk for residues of chlorinated pesticides. 10470  
Collaborative, study of the sweep co-distillation cleanup for chlorinated pesticide residues in edible fats and oils. 10472  
Analysis of multiple pesticide residues--chemical identity and confirmation of results. 10473  
Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479  
Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa. 10480  
Reaction of aflatoxin B1 with acetic acid-thionyl chloride. 10481
- CHEMICAL CONTROL (INSECTS)**  
Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131  
Beetle. 10137  
Growers join forces to battle the boll weevil. 10233  
Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234  
The biology, mode of attack and damage caused by the thrips, (*Haplothrips tritici* Kurd) to wheat crops. 10235  
European red mite and two-spotted spider mite control on apples in California. 10236

# SUBJECT INDEX

## CHEMICAL CONTROL (NEMATODES)

A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhizopertha dominica* (F.) in wheat. 10237

Biology and control of leopard moth on pear trees in the United Arab Republic. 10242

A review of the use of insecticides on the main agricultural crops of the world--3. Section 3: Cotton. 10245

Spray droplet size in the control of spruce budworm, holl weevil, hollworm and cabbage looper. 10247

Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries. 10248

Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug, at seedling stage. 10251

Easy-to-kill pests of fruit trees...codling moth. 10253

Notes and considerations on the control of the cypress moth, *Catoria unipennaria* (Guen.) (Lepidoptera, Geometridae). 10261

Toxicity of eight insecticides to the coccinellid predator *Chilomenes sexmaculata* Fabr.. 10262

Chemical control of *Drosicha mangiferae* (Green), a serious pest of Citrus spp. in Madhya Pradesh. 10263

Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler. 10266

Control of *Brachyrhinus cribricollis* injuring ornamentals. 10269

Wharf horer. 10385

The control of insects in hagged grain by the injection of dichlorvos. 10387

Analysis of grain storage problems in India. 10390

Biological studies in Ghana in the control of *Cadra cautella* (Wlk.), the tropical warehouse moth. 10391

## CHEMICAL CONTROL (NEMATODES)

Nematocides. Patent 3,457,353. 10271

## CHEMICAL CONTROL (PESTS)

Metabolism of strychnine nitrate applied for the control of the hear. 10318

Use of metaldehyde as dusts and sprays to control the giant African snail *Achatina fulica* Bowdich. 10319

Observations on the control of *Achatina fulica* Bowdich, the giant African snail with methldehyde. 10320

## CHEMICAL CONTROL (PLANT DISEASES)

Fungicidal control of rice diseases. 10170

Control of barley loose smut in Wisconsin in 1966 and 1967. 10171

Effect of CL-50, a new synthetic fungicide on certain fungi. 10173

Chemical control of loose smut in harley in Minnesota. 10174

Chemotherapy of loose smut of harley in Canada. 10179

List of publications on fungus and insect defects in forest products. 10182

A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling hlights of wheat, barley, oats, and sorghum. 10189

Effect of chemical treatments on the control of. 10191

Control of loose smut of wheat and barley in Arkansas with fungicides. 10192

Seed-mycoflora of musk-melon. 10193

Chemical control of wheat and barley loose smut. 10194

Effect of two systemic fungicides on control of loose smut in wheat. 10195

Effectiveness of fungicides in controlling barley loose smut. 10196

Efficacy of oxathiin fungicides for control of loose smut in barley. 10199

Preliminary observations on the treatment of wheat and barley with a fungicide to control loose smut in England. 10200

Fungicidal control of smut diseases of cereals. 10207

Deleterious effect of certain fungitoxicans on the formation of Mycorrhizae on corn by *Endogone fasciculata* and on corn root development. 10209

Chemical control of loose smut in barley. 10214

Results obtained with a systemic oxathiin fungicide in France. 10220

The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl,4-oxathiin. 10222

Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223

Seed treatment trial, 1967. 10229

Treated water curbs tomato decay. 10384

Chemistry of fungicides. 10476

## CHEMICAL CONTROL (WEEDS)

Response of tropical vegetation to herbicides. 10275

African feather grass--a weed worth watching. 10279

Control of aquatic plants with dithiodiundecanoic acid. Patent 3,432,286. 10281

A method for spraying individual trees. 10282

Downy brome control by soil-active herbicides for revegetation of rangelands. 10283

1967 pre-emergence weed control in potatoes on Long Island. 10289

Phytotoxicity of bemethylated analogs of diphenamid. 10290

Repeated, foliar applications of herbicides on johnsongrass. 10291

The response of fumitory to various herbicides. 10293

Selective grass control with siduron. 10294

Weed control in sugarheets. 10296

Control of johnsongrass on drainage ditchbanks in sugarcane. 10297

Reaction of flax to dicamba applied at several stages. 10301

Effects of chlorpropham vapors on dodder seedlings. 10305

Effects of growth regulators and herbicides on germination of *Hydrilla turions*. 10306

Control of green rabbitbrush and big sagebrush with 2,4-D and picloram. 10310

Accurately predicting a herbicides potential. 10313

The effects of two phytobland oils on the postemergence activity of bromoxynil and DNBP applied in two spray volumes in alfalfa. 10316

Effects of high rates of trifluralin and vernolate on soybean yield and growth. 10317

An evaluation of herbicide incorporation equipment. 10484

## CHEMICAL REACTIONS

Mode of action of agricultural antibiotics developed in Japan. 10205

Chemistry of insecticides. 10463

Chemistry of herbicides. 10464

## CHEMICAL STRUCTURE

Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium wilt* with Thiabendazole and Benlate. 10181

Structure of pesticides and decomposition by soil microorganisms. 10427

The correlation between physiological activity and physicochemical property of the substituted phenols. 10437

Reactions of pesticides in soils. 10468

## CHEMICALS

Hexalure, an insect sex attractant discovered by empirical screening. 10025

Control of aquatic plants with dithiodiundecanoic acid. Patent 3,432,286. 10281

## CHEMISTRY

Allergic responses to insects. 10166

Modifications of the micromethod of sample cleanup for thin-layer and gas chromatographic separation and determination of common organic pesticide residues. 10413

Trapping of dieldrin lost from aqueous algae cultures. 10420

Extraction, separation, and GLC detection of silvex and its propylene glycol ether ester in fish tissue. 10421

Volatile metabolites from dimethyldithiocarbamate fungicide residues. 10441

Review of methods for mercury in pesticide formulations. 10469

The insecticides; chemistry, mode of action, and toxicity. 10474

## CHEMOSTERILANTS

Damage to testes and recovery of fertility in holl weevils fed chemosterilants. 10100



- A simple apparatus for dipping treatment of insects for varying periods of time. 10116
- New approaches to the control of pest organisms. 10118
- Mutagenic effects of TEPA and METEPA in mice. 10333
- CHENOPODIUM ALBUM**  
Absorption and translocation of pyrazon by plants. 10287
- Phytotoxicity of hemethylated analogs of diphenamid. 10290
- CHEYLETIDAE**  
Morphology and biology of a nest-producing mite, *Bakericheyla chanayi* (Acarina: Cheyletidae). 10015
- CHICKENS**  
Control method of inactivated vaccines against the Newcastle disease by means of the titulation of neutralizing antibodies. 10334
- Isolation of *Salmonella pullorum* from a caseous nodular in the orbital region of a chick Arbor Acres breed. 10338
- The fine structure and method of feeding of the tissue parasitizing stages of *Histomonas meleagridis*. 10378
- The difference in sensitivity to the sterilizing action of O,O-diethyl-O-paranitrophenyl thiophosphate of the embryonic testicles of quails and chickens in vitro culture. 10430
- CHILIS**  
Interaction between chilli mosaic and powdery mildew in tobacco. 10176
- CHILO SUPPRESSALIS**  
Biology of *Apanteles chilonis* and *A. flavipes* (Hymenoptera: Braconidae), parasites of *Chilo suppressalis*. 10045
- CHILO ZONELLUS**  
Rearing of the maize stem borer, *Chilo zonellus* Swinhoe on artificial diet. 9988
- Variations in free amino acids in the larvae and pupae of *Chilo zonellus*. 9994
- CHILOMENES SEXMACULATA**  
Toxicity of eight insecticides to the coccinellid predator *Chilomenes sexmaculata* Fabr.. 10262
- CHIRONOMIDAE**  
Substrate preferences and invasion behaviour exhibited by larvae of *Nilodorum brevibucca* Freeman (Chironomidae) under experimental conditions. 10066
- CHLAMYDOSPORES**  
Survival of root-infecting fungi in soil. XII. Germination and survival of endoconidia and chlamydospores of *Thielaviopsis basicola* in fallow soil and in soil adjacent to germinating bean seed. 10213
- CHLORANIL**  
Chemistry of fungicides. 10476
- CHLORDANE**  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032
- Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler. 10266
- Control of *Brachyrhinus cribricollis* injuring ornamentals. 10269
- Gas chromatographic characteristics of chlordane. I. Effect of an aqueous environment on the heptachlor component. 10458
- CHLORINATED HYDROCARBONS**  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032
- Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides. 10043
- Biological interaction between plasticizers and insecticides. 10058
- The absorption of p,p'-DDE by larvae of *Aglais urticae* (Lepidoptera: Nymphalidae). 10078
- Inheritance of DDT-RESISTANCE in *Musca domestica* nebulosa Fabr.. 10096
- Selection for lindane resistance in *Dermestes maculatus* de Geer (Coleoptera, Dermestidae). 10114
- Variability in insecticide tolerance of eighteen honey-bee colonies. 10125
- Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131
- Beetle. 10137
- On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants. 10149
- Chemical control of loose smut in barley. 10214
- Biology and control of leopard moth on pear trees in the United Arab Republic. 10242
- Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug. at seedling stage. 10251
- Toxicity of eight insecticides to the coccinellid predator *Chilomenes sexmaculata* Fabr.. 10262
- Chemical control of *Drosicha mangiferae* (Green), a serious pest of Citrus spp. in Madhya Pradesh. 10263
- Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler. 10266
- Control of *Brachyrhinus cribricollis* injuring ornamentals. 10269
- Metabolism of organic pesticide chemicals in higher plants. 10278
- Surface hydrology and pesticides. 10392
- Eggs and chlorinated hydrocarbons. 10394
- Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395
- Potentials for removing pesticides from water. 10396
- Pesticides and clay minerals. 10397
- Consequences of insecticide use of nontarget organisms. 10402
- DDT in fats on Antarctic animals. 10405
- Pesticide residues in the ecosystem. 10407
- Uptake of dieldrin by isolated perfused gills of rainbow trout. 10408
- Structure of pesticides and decomposition by soil microorganisms. 10427
- Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value. 10445
- Gas chromatographic characteristics of chlordane. I. Effect of an aqueous environment on the heptachlor component. 10458
- Chemistry of insecticides. 10463
- Insecticides, how to use them safely and effectively. 10466
- Comparison of ten methods for the analysis of milk for residues of chlorinated pesticides. 10470
- Collaborative, study of the sweep co-distillation cleanup for chlorinated pesticide residues in edible fats and oils. 10472
- Conversion of heptachlor to its epoxide. 10478
- Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479
- Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa. 10480
- Note on versatility of silicone Dow Corning 11 substrate for gas chromatography of pesticides. 10482
- CHLORINE**  
Treated water curbs tomato decay. 10384
- Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395
- CHLORO-N-ISOPROPYLACETANILIDE, 2-**  
Weed control in sugarbeets. 10296
- CHLORO-1-(2,4,5-TRICHLOROPHENYL)VI-NYL DIMETHYL PHOSPHATE, 2-**  
Control of *Brachyrhinus cribricollis* injuring ornamentals. 10269
- CHLOROFORM**  
An integrated technique to study the effects of fumigants on respiration of insects. 9972
- CHLORONEB**  
Effectiveness of fungicides in controlling barley loose smut. 10196
- CHLOROPIDAE**  
Chloropidae (Diptera), unknown in the fauna of Bulgaria. 9871
- CHLORTETRACYCLINE**  
Tetracycline antibiotic compositions for oral use. Patent 3,454,697. 10337
- CHOLINESTERASES**  
Physico-organic chemical approach to the mode of action of organophosphorus insecticides. 10014
- Peacock plasma, a useful cholinesterase source for inhibition residue analysis of insecticidal carbamates. 10419
- CHORISTONEURA FUMIFERANA**  
Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper. 10247
- CHRISTMAS TREES**  
Growing Christmas trees on a power line right-of-way. 10485

# SUBJECT INDEX

## CHROMATOGRAPHY

### CHROMATOGRAPHY

- The neutral lipids from various organs of the termite *Macrotermes goliath*. 9991
- Biological interaction between plasticizers and insecticides. 10058
- Behavior of pyrazon in soil. 10286
- Translocation of the herbicide dicamba in purple nutsedge, *Cyperus rotundus*. 10304
- Absorption and penetration of picloram in potato tuber discs. 10308
- Gas chromatographic method for determination of diethylstilbestrol in feeds. 10356
- The fate of phenyl N,N'-dimethylphosphor-diamidate in soil. 10401
- GLC determination of residues of disulfoton, oxydemetonmethyl, and their metabolites in tobacco plants. 10404
- DDT in fats on Antarctic animals. 10405
- Gas chromatographic determination of residues of Dalapon in several substrates. 10410
- Extraction and gas-liquid chromatographic determination of vernolate in soil. 10412
- Modifications of the micromethod of sample cleanup for thin-layer and gas chromatographic separation and determination of common organic pesticide residues. 10413
- Activation and standardization of purified silica gel for column chromatographic cleanup of pesticide residue extracts. 10414
- Trapping of dieldrin lost from aqueous algae cultures. 10420
- Gas chromatographic determination of ethyl O,O-dimethyldithiophosphoryl-1-phenyl acetate in technical grade cidal and its 50 percent liquid formulation. 10457
- Gas chromatographic characteristics of chlordane. I. Effect of an aqueous environment on the heptachlor component. 10458
- Thin layer densitometric determination of rotenone and deguelin. 10461
- Extraction and gas-liquid chromatographic determination of vernolate in soil. 10467
- Rapid method for the extraction, cleanup, and GLC determination of toxic residues of temik. 10471
- Analysis of multiple pesticide residues--chemical identity and confirmation of results. 10473
- Acetonitrile extraction and determination of carbaryl in fruits and vegetables. 10475
- Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa. 10480
- Note on versatility of silicone Dow Corning 11 substrate for gas chromatography of pesticides. 10482
- An evaluation of herbicide incorporation equipment. 10484
- ### CHROMOSOMES
- Interaction between chronic irradiation, vibration, and centrifugation in the production of genetic effects in *Drosophila*. 10148

- Homologous lines of chromosome polymorphism in the natural populations of Adirondack black fly (Diptera, Simuliidae). 10150
- Meiosis in the grasshopper: Chiasma frequency after elevated temperature and X-rays. 10151
- A third locus (lpo) affecting pyridoxal oxidase in *Drosophila melanogaster*. 10152
- Chromosome behavior under the influence of claret-nondisjunctional in *Drosophila melanogaster*. 10154
- Segregation distorter in *D. melanogaster* males: An effect of female genotype on the segregation ratio. 10155
- Autosomal fragmentations and fusions in Odonata and their evolutionary implications. 10157
- Changes in chromosomes induced by different DNA virus in cells of *Rhynchosciara angela*. 10158
- Position effect on DNA transcription and replication. 10160
- The role of sexuality in dosage compensation in *Drosophila*. 10162
- Colchicine-induced tetraploid azaleas. 10447
- ### CHRYSOBOTHRI
- New species of Chrysobothris from the Pacific Northwest (Coleoptera: Buprestidae). 9870
- ### CHRYSOMELIDAE
- A new species of Chrysomela (Coleoptera, Chrysomelidae)--an important component of the Taimyr Peninsula biocoenoses. 9918
- Flea beetles *Phyllotreta cruciferae* Goetz. (Coleoptera, Chrysomelidae) a new pest of stock flower *Mathiola* sp. in Rajasthan. 10110
- Refined defensive mechanisms in *Chrysomela scripta*. 10139
- ### CHRYSOMPHALUS AONIDUM
- Control of Florida red scale in Florida with the parasite *Aphytis holoxanthus*. 10264
- ### CHRYSOTHAMNUS
- Control of green rabbitbrush and big sagebrush with 2,4-D and picloram. 10310
- ### CICADELLIDAE
- Study of the world Gyponinae (Homoptera: Cicadellidae). A synopsis of the genus *Clinonaria*. 9883
- ### CIPC
- Effects of several herbicides on yews and Japanese maples. 10280
- Effects of chlorpropham vapors on dodder seedlings. 10305
- ### CIRRHOSES
- Schistosomal cirrhosis in pigs in Jabalpur, M. P.. 10381
- ### CITRUS
- The presence of tristeza virus in certain species of citrus in Cyprus. 10212
- The colonization and success in Greece of some imported *Aphytis* spp. (Hym. Aphelinidae) parasitic on citrus scale insects (Hom. Diaspididae). 10241
- Chemical control of *Drosicha mangiferae* (Green), a serious pest of Citrus spp. in Madhya Pradesh. 10263

- Control of Florida red scale in Florida with the parasite *Aphytis holoxanthus*. 10264
- ### CLAY MINERALS
- Pesticides and clay minerals. 10397
- ### CLIMATE
- The stem borer *Sesamia botanophaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243
- ### COBALT SULFATE
- Effect of manganese and cobalt on ascorbic acid metabolism in rats. 10352
- ### COCCIDIOSIS
- Problems in raising ducks. 10357
- ### COCCINELLIDAE
- Scymnus* (Sidis) *hickeyi* Fursch, as a foe of *Pseudococcus citri* Risso. 9893
- Description, biology, and importance of a new species of Allantonematidae (Nematoda), parasite of the aphidiphagous Coccinellidae: *Parasitylenchus coccinellinae*, n. sp. 10039
- ### COCCOIDEA
- Contribution to the knowledge of the Coccidae from Brazil (Homoptera-Coccidea). 9892
- ### COCHLIOMYIA MACELLARIA
- Comparison of effects of irradiation on the primary spermatogonia and mature sperm of three species of Diptera. 10102
- ### COLCHICINE
- Colchicine-induced tetraploid azaleas. 10447
- ### COLEOPTERA
- Entomocoenological and biological studies in Rosa damascena Mill. plantations. II. Coleoptera. 10081
- Beetle. 10137
- ### COLEOTECHNITES MILLERI
- Needle miner infestations in lodgepole pine east of the Sierra crest. 10267
- ### COLLECTOTRICHUM
- Collectotrichum nigrum from eggplant. A new record from India. 10201
- ### COLOR
- Field observations on periodicity and site preference in oviposition by *Aedes aegypti* (L.) and related mosquitoes (Diptera: Culicidae) in Kenya. 10072
- ### COMPETITION
- Biochemical basis for plant competition. 10274
- Influence of weed competition on sorghum growth. 10277
- Yellow foxtail competition in grain sorghum. 10284
- Tall waterhemp competition in grain sorghum. 10285
- Competition between flax and wild buckwheat. 10440
- ### COMPOSITAE
- A necrotic type virus occurring on a weed in Germany. 10227
- ### CONCRETE
- Foot lameness in pigs. 10332
- ### CONFERENCES
- Official proceedings. Second annual Pacific Northwest Animal Nutrition Conference, at Pacific Science Center, Seattle, Washington, November 9-10, 1967. 10350



- CONIDIA**  
Verticillium wilt of tobacco. VIII. Movement of conidia of *Verticillium dahliae* Kleb. in tobacco plants. 10230
- CONIFERAE**  
*Heterobasidion annosum*. 10215  
Physiological and biochemical contribution to fumc damage research. 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter. 10432
- CONIOPTERYGIDAE**  
The genus *Heteroconis* Enderlein, 1905 (Neuroptera, Coniopterygidae). 9919
- CONTAINERS**  
Analysis of grain storage problems in India. 10390
- COPPER**  
Effect of CL-50, a new syntetic fungicide on certain fungi. 10173
- COPTOTERMES FORMOSANUS**  
Foraging galleries of the Formosan subterranean termite, *Coptotermes formosanus*, in Louisiana. 10052
- COREIDAE**  
Description of immature stages of Coreidae. 3. *Arebimerus alternus*. 9956  
Description of immature stages of Coreidae. 1. *Euthochtha galeator*. 9957  
Hydrogen-ion concentration and the digestive enzymes in *Cletus signatus* Walker (Heteroptera: Coreidae). 10063
- CORN**  
Corn stunt vector leafhopper attractancy to and oviposition preference for hybrid dent corn. II. *Graminella nigrifrons*. 9992  
Deleterious effect of certain fungitoxicants on the formation of *Mycorrhizae* on corn by *Endogone fasciculata* and on corn root development. 10209  
The stem borer *Sesamia botanophaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243  
Studies on insect damage and germination of seeds. III. Germination of wheat jowar and maize seeds damaged by the developing grubs of *Sitophilus oryzae* L. and *Rhizopertha dominica* F.. 10270  
Industry's concern with pesticide residues. 10411  
The mode of action of maleic hydrazide: Inhibition of growth. 10444  
Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value. 10445
- CORPORA ALLATA**  
Female specific protein: Biosynthesis controlled by corpus allatum in *Leucophaea maderae*. 10002
- COSSONINAE**  
*Allomorphus franzi*, n. gen., n. spec. (Coleoptera, Curculionidae), a new species and genus from Austria. 8. Contribution to the knowledge of the Palearctic Cossoninae. 9891
- COSTELYTRA ZEALANDICA**  
Laboratory demonstration of a chemical sex attractant in *Costelytra zealandica* (White) (Scaevadidae: Coleoptera). 10030
- COSTS**  
Growing Christmas trees on a power line right-of-way. 10485
- COTTON**  
Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium wilt* with Thiabendazole and Benlate. 10181  
Growers join forces to battle the boll weevil. 10233  
Bees as pests. 10244  
A review of the use of insecticides on the main agricultural crops of the world--3. Section 3: Cotton. 10245  
Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper. 10247  
Industry's concern with pesticide residues. 10411  
Effects of ammonium thiocyanate on carbohydrate metabolism in the cotton plant. 10455
- COVERED SMUT**  
A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum. 10189
- COWPEAS**  
Preliminary studies on the integrated control of the pest complex on cowpea, *Vigna unguiculata* Walp., in Nigeria. 10268
- CRABS**  
Role of hermit crabs in the biological control of *Achatina fulica* (Bowdich) on the Andamans. 10321
- CROP LOSSES**  
The stem borer *Sesamia botanophaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243  
Studies on insect damage and germination of seeds. III. Germination of wheat jowar and maize seeds damaged by the developing grubs of *Sitophilus oryzae* L. and *Rhizopertha dominica* F.. 10270  
Metabolism of strychnine nitrate applied for the control of the bear. 10318  
Studies on the incidence and extent of damage due to insect pests in stored seeds--1. Cereal seeds. 10388
- CROP VARIETIES**  
Corn stunt vector leafhopper attractancy to and oviposition preference for hybrid dent corn. II. *Graminella nigrifrons*. 9992  
Ir-2, a germ plasm bank of virus-free fruit tree clones. 10184  
Breeding for rust resistance. Advances in genetics give hope for total immunity. 10211  
Colchicine-induced tetraploid azaleas. 10447
- CROP YIELDS**  
Biology of the hillbug *Sphenophorus venatus confluens*, a new pest of orchardgrass. 10047  
Growers join forces to battle the boll weevil. 10233  
The stem borer *Sesamia botanophaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243  
Influence of weed competition on sorghum growth. 10277  
1967 pre-emergence weed control in potatoes on Long Island. 10289
- Effects of high rates of trifluralin and vernolate on soybean yield and growth. 10317  
The effect of N-dimethyl amino succinamic acid (Alar) on size, shape and maturity of Delicious apples. 10450
- CROPS**  
Herbicide screening tests during 1967 in agricultural crops and potted herbs. 10307  
Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395
- CTENICERA AERIPENNIS DESTRUCTOR**  
Effect of temperature on water absorption, development, and hatching in eggs of the prairie grain wireworm, *Ctenicera destructor*. 9999
- CUCUMBER MOSAIC VIRUS**  
Studies on the infection of cucumber mosaic virus. V. the observation of epidermal cell in the local lesion. 10180
- CUCUMBERS**  
Translocation of tobacco ringspot virus in cucumber and zinnia. 10206  
Metabolism of trifluralin in peanuts and sweet potatoes. 10273
- CUE-LURE**  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032
- CULEX PIPIENS QUINQUEFASCIATUS**  
Anatomical indicators for assessing age of mosquitoes: changes in ovarian follicles. 10107
- CULICIDAE**  
A new species of *Ficalbia* (Ravenalites) from Cambodia (Diptera: Culicidae). 9910  
A new species of *Aedes* (*Stegomyia*) from Thailand (Diptera: Culicidae). 10164
- CULTURE MEDIA**  
Course of sporulation of *Bacillus popilliae* in liquid medium containing activated carbon. 10029
- CURCULIONIDAE**  
*Allomorphus franzi*, n. gen., n. spec. (Coleoptera, Curculionidae), a new species and genus from Austria. 8. Contribution to the knowledge of the Palearctic Cossoninae. 9891  
Observations on the biology of *Lathromeroides* sp. (Trichogrammatidae: Hymenoptera) egg parasite of the leaf rolling weevil, *Apoderus sissu* Marshall (Curculionidae: Coleoptera) with notes on the host weevil. 10117  
Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131  
Growers join forces to battle the boll weevil. 10233
- CURVULARIA**  
A leaf spot disease of *Cyamopsis tetragonoloba* caused by *Curvularia lunata* in India. 10177
- CUSCUTA**  
Biological control of *Cuscuta* spp. II. Biology and host-plant range of *Melanagromyza cuscuteae* Hering (Dipt. Agromyzidae). 10272  
Effects of chlorpropham vapors on dodder seedlings. 10305
- CUTICLE**  
The absorption of p,p'-DDE by larvae of *Aglais urticae* (Lepidoptera: Nymphalidae). 10078

# SUBJECT INDEX

## CYAMOPSIS TETRAGONOLOBA

- Oenocytes: form and function.  
10093
- CYAMOPSIS TETRAGONOLOBA**  
A leaf spot disease of *Cyamopsis tetragonoloba*  
caused by *Curvularia lunata* in India.  
10177

## CYCLODIENE COMPOUNDS

- Uptake of dieldrin by isolated perfused gills of  
rainbow trout.  
10408

## CYNIPID LEAF GALLS

- Some observations on *Cynips quercus folii* L.  
galls on *Quercus robur* L. in Bydgoszcz province.  
10203

## CYNIPIDAE

- Inhibition of the defense reaction of *Drosophila*  
*melanogaster* parasitized simultaneously by the  
wasps *Pseudeucoila bochei* and *Pseudeucoila*  
*mellipes*.  
10122

- Some observations on *Cynips quercus folii* L.  
galls on *Quercus robur* L. in Bydgoszcz province.  
10203

## CYNODON DACTYLON

- Influence of light on sporulation by *Hel-*  
*minthosporium stenospilum*.  
10183
- Control of johnsongrass on drainage ditchbanks  
in sugarcane.  
10297

## CYPHERUS ROTUNDUS

- Translocation of the herbicide dicamba in purple  
nutsedge, *Cyperus rotundus*.  
10304

## CYSTICERCUS

- Use of inert particles for the diagnosis of sheep  
cisticercosis. Bentonite test.  
10367

## CYTOGENETICS

- Chromosome behavior under the influence of  
claret-nondisjunctional in *Drosophila*  
*melanogaster*.  
10154
- Autosomal fragmentations and fusions in  
Odonata and their evolutionary implications.  
10157
- Changes in chromosomes induced by different  
DNA virus in cells of *Rhynchosciara angelae*.  
10158

## CYTOKININS

- Effect of cytokinins on tobacco mosaic virus  
production in local-lesion and systemic hosts.  
10204
- Cytokinins and transfer ribonucleic acids. II.  
Presence of cytokinins in different amino-acid  
specific transfer ribonucleic acids of brewer's  
yeast as revealed by the growth response of  
tobacco-pith callus tissue and *Scorzonera crown-*  
*gall* tissue.  
10439

## CYTOLOGY

- Ultrastructural observations on the branched  
rods associated with some insect granuloses.  
9960
- Fine structures of merozoites of *Babesia*  
*bigemina* in the ovaries of *Boophilus microplus*  
and *Boophilus decoloratus*.  
10012
- Ancylostoma caninum*: Fine structure of in-  
testinal epithelium.  
10377

## CYTOPATHOLOGY

- Action of honey bee venom on development of  
epithelial cellular cultures of monkey's kidneys.  
9997

## D, 2,4-

- Response of tropical vegetation to herbicides.  
10275
- Response of ironweed and huckbrush to herbi-  
cides and to herbicides in combinations with  
mowing, nitrogen fertilizer, and surfactants.  
10303
- Effects of growth regulators and herbicides on  
germination of *Hydrilla turions*.  
10306

- Control of green rabbitbrush and big sagebrush  
with 2,4-D and picloram.  
10310

- Response of soybeans to 2,4-D, dicamba, and  
picloram.  
10312

- Delayed lethal effect of 2,4-dichlorophenox-  
yacetic acid on bacteria.  
10429

- Reversion of senescence: Effects of 2,4-  
dichlorophenoxyacetic acid and indoleacetic  
acid on respiration, ethylene production, and  
ripening of banana fruit slices.  
10452

## DACAGIN

- Spray gel agent solves drift problem.  
10456

## DACTYLIS GLOMERATA

- Biology of the billbug *Sphenophorus venatus*  
*confluens*, a new pest of orchardgrass.  
10047

## DACUS CUCURBITAE

- A note on the occurrence of fruit fly maggots of  
*Dacus cucurbitae* Coq. in cecidomyiid galls of  
*Coccinia indica* in Andhra Pradesh.  
9998
- Mediterranean fruit flies and melon flies trapped  
at various heights with synthetic lures.  
10032

## DACUS OLEAE

- The first large-scale experimentation with the  
biological control of the olive fly (*Dacus oleae*  
Gmel.) by means of *Opius concolor* Szep. sicu-  
lus Mon. in Sicily.  
10256

## DAIRY EQUIPMENT

- An evaluation of herbicide incorporation equip-  
ment.  
10483
- An evaluation of herbicide incorporation equip-  
ment.  
10484

## DALAPON

- Repeated, foliar applications of herbicides on  
johnsongrass.  
10291
- Translocation of assimilates and dalapon in  
established johnsongrass.  
10292
- Control of johnsongrass on drainage ditchbanks  
in sugarcane.  
10297
- Gas chromatographic determination of residues  
of Dalapon in several substrates.  
10410

## DANAUS

- A new *Danaus* species from Central-Celebes.  
9923

## DASHEEN

- Rhizoctonia leaf rot of colocasia in India.  
10188

## DDT

- Biological interaction between plasticizers and  
insecticides.  
10058
- Inheritance of DDT-RESISTANCE in *Musca*  
*domestica nebuld* Fabr.  
10096
- Variability in insecticide tolerance of eighteen  
honey-bee colonies.  
10125

- On the determination of insect and mite re-  
sistance to pesticides. The influence of these  
products in sublethal doses on animals and in the  
trophic effect following biochemical repercus-  
sions on plants.  
10149

- Biology and control of leopard moth on pear  
trees in the United Arab Republic.  
10242

- Chemical control of *Drosicha mangiferae*  
(Green), a serious pest of *Citrus* spp. in Madhya  
Pradesh.  
10263

- Eggs and chlorinated hydrocarbons.  
10394

- Research on pollution of crops, soil and shallow  
bodies of water in Liguria, through residues of  
some organochlorinated pesticides.  
10395

- Water florae as indicators of irrigation water  
contamination by DDT.  
10403

- DDT in fats on Antarctic animals.  
10405

- Problems with DDT in fish culture operations.  
10406

- Pesticide residues in the ecosystem.  
10407

- Degradation and disappearance of ortho, para  
isomer of technical DDT in living and dead avian  
tissues.  
10425

- Effect of dichloro diphenyl trichloro-ethane  
(DDT) on leghemoglobin content of root  
nodules of *Phaseolus aureus* (green gram).  
10438

- Collaborative, study of the sweep co-distillation  
cleanup for chlorinated pesticide residues in edi-  
ble fats and oils.  
10472

- Distribution ratio of some chlorinated hydrocar-  
bon insecticides between hexane and water.  
10479

- Evaluation of extraction and cleanup methods  
for analysis of DDT and DDE in green alfalfa.  
10480

## DECOMPOSITION

- Behavior of pyrazon in soil.  
10286
- Influence of pesticides on soil microbes and soil  
properties.  
10400
- Structure of pesticides and decomposition by soil  
microorganisms.  
10427
- Chemistry of insecticides.  
10463

## DEER

- Relationship between amount of thinning, time  
of care, and damages caused by red deer.  
10323
- The incidence of demodectic mites in the eyelids  
of various mammalian hosts.  
10363

## DEFICIENCY DISEASES

- Vitamin A metabolism in protein deficiency.  
10324
- Official proceedings. Second annual Pacific  
Northwest Animal Nutrition Conference, at  
Pacific Science Center, Seattle, Washington,  
November 9-10, 1967.  
10350

- Problems in raising ducks.  
10357

## DEFOLIANTS

- Chemical stimulation of ethylene evolution and  
bud growth.  
10300

## DEFOLIATION

- Needle miner infestations in lodgepole pine east  
of the Sierra crest.  
10267

## DEGRADATION

- The fate of phenyl N,N'-dimethylphosphor-  
diamidate in soil.  
10401

- The in vitro metabolism of organophosphorus in-  
secticides by tissue homogenates from mammal  
and insect.  
10426

- Degradation of p32-bromophos by microorgan-  
isms and seedlings.  
10449

- Atrazine degradation in two soil profiles.  
10477



# SUBJECT INDEX

## DIMETHYL-3-(ALPHA,ALPHA,ALPHA-TRIFLUORO-M-TOLYL)UREA, 1,1-

- DEGUCLIN**  
Thin layer densitometric determination of rotenone and deguelin. 10461
- DEMETHYLCHLORTETRACYCLINE**  
Tetracycline antibiotic compositions for oral use. Patent 3,454,697. 10337
- DEMETON**  
Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries. 10248
- DEMODEX**  
The incidence of demodectic mites in the eyelids of various mammalian hosts. 10363
- DENDROLIMUS SPECTABILIS**  
Symposium on the principles of the application of microbiological preparations in nature. 10249
- DEOXYRIBONUCLEIC ACID**  
Changes in chromosomes induced by different DNA virus in cells of *Rhynchosciara angelae*. 10158  
Position effect on DNA transcription and replication. 10160
- DERMACENTOR VARIABILIS**  
Oviposition and hatching in two species of ticks in relation to moisture deficit. 10119
- DERMESTES MACULATUS**  
Selection for lindane resistance in *Dermestes maculatus* de Geer (Coleoptera: Dermestidae). 10114
- DEVELOPMENT**  
Biochemical study of *Plodia interpunctella* (Hbn.) (Lepidoptera) I--Variations of body weight, water content, and dry matter content. 9993  
Action of honey bee venom on development of epithelial cellular cultures of monkey's kidneys. 9997
- DIACRISIA OBLIQUA**  
Effect of different food plants on the larval and post-larval development on *Diacrisia obliqua* Walker. 10084
- DIAGNOSIS**  
Rabies diagnosis. Observations on strains of virus with low pathogenicity. 10349  
Spirurata of animals and humans and the diseases. 10382
- DIASPIDIDAE**  
The identification and distribution of *Quadraspidiotus* species (Homoptera: Diaspididae) on pome and stone fruits in Australia. 9876  
The colonization and success in Greece of some imported *Aphytis* spp. (Hym. Aphelinidae) parasitic on citrus scale insects (Hom. Diaspididae). 10241
- DIATRAEOPHAGA STRIATALIS**  
Notes on the biology of *Diatraeophaga striatalis* Townsend, tachinid parasite of *Proceras sacchariphagus* Boj. 9970
- DIAZINON**  
Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234  
A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhyzopertha dominica* (F.) in wheat. 10237  
Chemical control of *Drosicha mangiferae* (Green), a serious pest of Citrus spp. in Madhya Pradesh. 10263
- Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods. 10409
- DICAMBA**  
Reaction of flax to dicamba applied at several stages. 10301  
Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants. 10303  
Translocation of the herbicide dicamba in purple nutsedge, *Cyperus rotundus*. 10304  
Response of soybeans to 2,4-D, dicamba, and picloram. 10312
- DICHLORO-2,2-BIS(P-CHLOROPHENYL)ETHYLENE, 1,1-**  
The absorption of p,p'-DDE by larvae of *Aglais urticae* (Lepidoptera: Nymphalidae). 10078  
Eggs and chlorinated hydrocarbons. 10394  
Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa. 10480
- DICHLORO-6-(O-CHLOROANILINO)-S-TRIAZINE, 2,4-**  
Chemistry of fungicides. 10476
- DICHLORPROP**  
The response of fumitory to various herbicides. 10293
- DICHLORVOS**  
Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides. 10043  
A killing agent for use in light traps. 10090  
A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhyzopertha dominica* (F.) in wheat. 10237  
Notes and considerations on the control of the cypress moth, *Catoria unipennaria* (Guen.) (Lepidoptera, Geometridae). 10261  
Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler. 10266  
The control of insects in bagged grain by the injection of dichlorvos. 10387
- DICOFOL**  
Toxicity of selected acaricides to susceptible and resistant strains of *Tetranychus urticae* Koch. 10128  
Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries. 10248
- DIELDRIN**  
Biological interaction between plasticizers and insecticides. 10058  
Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131  
Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395  
Uptake of dieldrin by isolated perfused gills of rainbow trout. 10408  
Trapping of dieldrin lost from aqueous algae cultures. 10420
- Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value. 10445  
Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479
- DIENESTROL DIACETATE**  
Gas chromatographic method for determination of diethylstilbestrol in feeds. 10356
- DIETHYL O-(2-QUINOXALINYL)PHOSPHOROTHIOATE, O,O**  
Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131
- DIETHYL O-2-PYRAZINYLPHOSPHOROTHIOATE, O,O**  
Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131
- DIETHYLCARBAMAZINE**  
*Dirofilaria immitis* from the eye of a dog. 10376
- DIETHYLSTILBESTROL**  
Gas chromatographic method for determination of diethylstilbestrol in feeds. 10356
- DIGITARIA SANGUINALIS**  
Selective grass control with siduron. 10294
- DIHYDRO-5-CARBOXANILIDO-6-METHYL-1,4-OXATHIIN, 2,3-**  
Control of barley loose smut in Wisconsin in 1966 and 1967. 10171  
Chemical control of loose smut in barley in Minnesota. 10174  
Chemotherapy of loose smut of barley in Canada. 10179  
Effect of chemical treatments on the control of. 10191  
Control of loose smut of wheat and barley in Arkansas with fungicides. 10192  
Effect of two systemic fungicides on control of loose smut in wheat. 10195  
Effectiveness of fungicides in controlling barley loose smut. 10196  
Efficacy of oxathiin fungicides for control of loose smut in barley. 10199  
Preliminary observations on the treatment of wheat and barley with a fungicide to control loose smut in England. 10200  
Chemical control of loose smut in barley. 10214  
Results obtained with a systemic oxathiin fungicide in France. 10220  
The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl-1,4-oxathiin. 10222  
Seed treatment trial, 1967. 10229
- DIMETHOATE**  
Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries. 10248
- DIMETHYL-3-(ALPHA,ALPHA,ALPHA-TRIFLUORO-M-TOLYL)UREA, 1,1-**  
Notice of filing of petition for food additives. 10417

# SUBJECT INDEX

## DIMETHYLAMINO)BENZENEDIAZO SODIUM SULFONATE,

**DIMETHYLAMINO)BENZENEDIAZO SODIUM SULFONATE, P-(**  
Chemistry of fungicides.

10476

**DIMETHYLAMINO-3,5-XYLYL METHYL-CAR-BAMATE, 4-**  
Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper.

10247

## DINOSEB

Effects of several herbicides on yews and Japanese maples.

10280

The effects of two phytobland oils on the postemergence activity of bromoxynil and DNBP applied in two spray volumes in alfalfa.

10316

## DIOXANE COMPOUNDS

Dioxane and dioxaspiro derivatives as attractants for male yellow-fever mosquitoes.

10023

## DIOXASPIRO COMPOUNDS

Dioxane and dioxaspiro derivatives as attractants for male yellow-fever mosquitoes.

10023

## DIPHENAMID

Phytotoxicity of bemethylated analogs of diphenamid.

10290

## DIPLOGASTERIDAE

Diplogasterid nematodes (Diplogasteridae: Rhabditida) and their relationship to insect disease.

10094

## DIPLOPODA

Seasonal changes in the distribution of the millipede *Cylindroiulus punctatus* (Leach) in decaying logs and soil.

9966

## DIPPING

A simple apparatus for dipping treatment of insects for varying periods of time.

10116

## DIPTERA

Wasps attacking other insects.

9979

Nematode parasites of the face fly and the onion maggot in France and Denmark.

10120

Research on the synantropic flies in the Sofia area, in regard to their epidemiological importance.

10165

## DIQUAT

Response of tropical vegetation to herbicides.

10275

Effects of growth regulators and herbicides on germination of *Hydrilla* turions.

10306

## DIROFILARIA IMMITIS

*Dirofilaria immitis* from the eye of a dog.

10376

## DISEASE TRANSMISSION

Vaccinated cattle.....can harbor foot and mouth disease.

10331

Transmission of histomoniasis with male *Heterakis gallinarum* (Nematoda).

10383

## DISODIUM METHANEARSONATE

Repeated, foliar applications of herbicides on johnsongrass.

10291

## DISTILLATION

Analysis of grains for multiple residues of organic fumigants.

10416

Trapping of dieldrin lost from aqueous algae cultures.

10420

Collaborative, study of the sweep co-distillation cleanup for chlorinated pesticide residues in edible fats and oils.

10472

## DISTRIBUTION

Distribution of larval and pupal instars of *Plusia argentifera* Guen. on tobacco plants.

10240

## DISULFOTON

Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries.

10248

GLC determination of residues of disulfoton, oxydemetonmethyl, and their metabolites in tobacco plants.

10404

Degradation and antcarboxylesterase activity of disulfoton and phorate after 60Co gamma irradiation.

10465

## DITHIODIUNDECANOIC ACID

Control of aquatic plants with dithiodiundecanoic acid. Patent 3,432,286.

10281

## DIURON

Effects of several herbicides on yews and Japanese maples.

10280

Effect of soil water stress and soil temperature on translocation of diuron.

10302

## DOGS

Notes on Parasitology: (A). Canine hookworm (*Ancylostoma caninum* (Ercolani 1859, Hall, 1913) and (B) Canina coccidiosis (*Eimeria canis*, Wenyon 1923).

10366

*Dirofilaria immitis* from the eye of a dog.

10376

## DORSAL VESSEL

Cockroach heart response to cardio-accelerators.

10074

## DPA

African feather grass--a weed worth watching.

10279

## DRAINAGE DITCHES

Control of johnsongrass on drainage ditchbanks in sugarcane.

10297

## DROSICHA MANGIFERAE

Chemical control of *Drosicha mangiferae* (Green), a serious pest of Citrus spp. in Madhya Pradesh.

10263

## DROSOPHILA

A new *Drosophila* species from northern Fennoscandia (Diptera).

9898

The influence of the rearing temperature on larval and pupal mortality and the duration of development of *Drosophila*.

9995

Evolution of fitness. IV. Genetic evolution of inter-specific competitive ability in *Drosophila*.

10146

Interaction between chronic irradiation, vibration, and centrifugation in the production of genetic effects in *Drosophila*.

10148

The role of sexuality in dosage compensation in *Drosophila*.

10162

## DROSOPHILA MELANOGASTER

Spermatocyte granules in *Drosophila melanogaster*.

10003

Estimation and dissipation of parathion residue from the crop of Indian rape seed.

10048

Biological interaction between plasticizers and insecticides.

10058

Inhibition of the defense reaction of *Drosophila melanogaster* parasitized simultaneously by the wasps *Pseudeucoila bochei* and *Pseudeucoila mellipes*.

10122

Ethyl methanesulfonate (EMS) induced mutations in *Drosophila melanogaster*.

10147

A third locus (lpo) affecting pyridoxal oxidase in *Drosophila melanogaster*.

10152

Chromosome behavior under the influence of claret-nondisjunctional in *Drosophila melanogaster*.

10154

Segregation distorter in *D. melanogaster* males: An effect of female genotype on the segregation ratio.

10155

Population genetics in the American tropics. IV. Temporal changes effected in natural populations of *Drosophila melanogaster* from Colombia.

10156

Position effect on DNA transcription and replication.

10160

## DROSOPHILA PSEUDOOBSCURA

Chromosomal polymorphism and genetic load in *Drosophila pseudoobscura*.

10153

A molecular approach to the study of genic heterozygosity in natural populations. IV. Patterns of genic variation in central, marginal and isolated populations of *Drosophila pseudoobscura*.

10159

## DRUG THERAPY

Chemotherapy of loose smut of barley in Canada.

10179

Foot lameness in pigs.

10332

## DRUGS

Medical and veterinary chemicals. Vol. I, parts I and II.

10355

## DUCK PLAGUE

The comparative pathology of duck plague in wild Anseriformes.

10342

## DUCKS

The comparative pathology of duck plague in wild Anseriformes.

10342

Problems in raising ducks.

10357

On the environment of *Polymorphus minutus* (Acanthocephala) in ducks.

10373

## DUSTING

Use of metaidehyde as dusts and sprays to control the giant African snail *Achatina fulica* Bowdich.

10319

## DYTISCIDAE

A record of diurnal flight in *Dytiscus*.

10132

## EARS

Ear mites of the genus *Dicrocheles* (Acarina: Mesostigmata) found on noctuids in Hawkes Bay.

9882

## ECDYSONE

Isolation and biological properties of the juvenile hormone.

10106

## ECHINOCHLOA CRUSGALLI

Selective grass control with siduron.

10294

## ECHINOCOCCOSIS

Recent techniques for serodiagnosis of hydatidosis. V. The importance of tests of bentonite, latex and indirect hemagglutination in the field sanitation of hidatidosis.

10372

## ECOLOGY

Structure, stability, and energy flow in plants and arthropods in a sericea *Lespedeza* stand.

10255



**ECONOMIC PLANTS**

In your garden - weeds: Robbers, but not always bad.

10168

**EDUCATION**

Research and education needs in the use of pesticides.

10486

**EGGPLANT**

*Colletotrichum nigrum* from eggplant. A new record from India.

10201

**EGGS**

An interesting case of adaptation to various hosts on the part of an egg parasite.

9985

The effect of gastro-intestinal secretions on taeniid egg membranes.

10374

Eggs and chlorinated hydrocarbons.

10394

**EIMERIA**

Notes on Parasitology: (A). Canine hookworm (*Ancylostoma caninum* (Ercolani 1859, Hall, 1913) and (B) Canine coccidiosis (*Eimeria canis*, Wenyon 1923).

10366

**EIMERIA TENELLA**

*Eimeria tenella* schizonts and merozoites in macrophages as shown by electron microscopy.

10354

**ELATERIDAE**

The effect of pupal predators on a population of winter moth, *Operophtera brumata* (L.) (Hydromenidae).

10010

**ELECTRON CAPTURE**

Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa.

10480

**ELECTRON MICROSCOPY**

Ultrastructural observations on the branched rods associated with some insect granuloses.

9960

Spermatocyte granules in *Drosophila melanogaster*.

10003

Fine structures of merozoites of *Babesia bigemina* in the ovaries of *Boophilus microplus* and *Boophilus decoloratus*.

10012

Notes on the male germ cells of a beetle, *Lepidotarsa decemlineata*.

10115

Studies on the biosynthesis of TMV. I. A system approaching a synchronized virus synthesis in a tobacco leaf.

10210

Evidence for restriction of a plant virus to phloem cells.

10219

*Eimeria tenella* schizonts and merozoites in macrophages as shown by electron microscopy.

10354

*Ancylostoma caninum*: Fine structure of intestinal epithelium.

10377

The fine structure and method of feeding of the tissue parasitizing stages of *Histomonas meleagridis*.

10378

**ELECTROPHORESIS**

Lactic dehydrogenase isozymes in the grasshopper.

9961

Female specific protein: Biosynthesis controlled by corpus allatum in *Leucophaea maderae*.

10002

A simple starch-gel electrophoretic method to investigate esterase inhibition by common organic insecticides.

10044

Analytical studies on extracts of *Litosomoides carini*.

10341

The fate of phenyl N,N'-dimethylphosphor-diamidate in soil.

10401

**ELECTROPHYSIOLOGY**

Intracellular activity in cricket neurons during the generation of behaviour patterns.

9968

Locust wind receptors. I. Transducer mechanics and sensory response.

9981

Locust wind receptors. ii. Interneurons in the cervical connective.

9983

Cockroach heart response to cardio-accelerators.

10074

Common inhibitory motoneurons in insects.

10089

**ELYMANA VIRESCENS**

Comparative efficiency of transmission of aster yellows by *Elymana virescens* and *Macrostes fasciatus* and the relative concentration of the causal agent in the vectors.

10238

**EMBIPTERA**

Observations on the life history and bionomics of *Oligotoma ceylonica ceylonica* Enderlein (Oligotomidae, Embioptera), commensal in the nest of the social spider *Stegodyphus sarasinorum* Karsch.

9978

**EMBRYOLOGY**

The external morphogenesis of grasshopper embryos.

9987

**ENCYRTIDAE**

First record of *Aewasius advena* Compere (Encyrtidae: Hymenoptera) from India as a parasite of *Ferrisia virgata* Ckll.

9932

**ENDOGENE FASCICULATA**

Deleterious effect of certain fungitoxicants on the formation of Mycorrhizae on corn by *Endogone fasciculata* and on corn root development.

10209

**ENDRIN**

Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides.

10043

Variability in insecticide tolerance of eighteen honey-bee colonies.

10125

Chemical control of *Drosicha mangiferae* (Green), a serious pest of Citrus spp. in Madhya Pradesh.

10263

Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides.

10395

Industry's concern with pesticide residues.

10411

Endrin induced alterations in bound carbohydrates in rat serum.

10423

**ENERGY**

Structure, stability, and energy flow in plants and arthropods in a sericea *Lespedeza* stand.

10255

**ENGLAND**

*Cnemacantha illota* (Loew) (Dipt., Lauxaniidae) recorded in error from Stanmore Common, Middx.

9896

**ENNOMOS SUBSIGNARIUS**

Elm spanworm eye size depends upon sex and diet.

10000

**ENTOMOGENOUS FUNGI**

*Antennopsis gallica* Heim and Buchli (hyphomycetes: Glocephalastrales), an entomogenous fungus on subterranean termites in Florida.

10022

Research on the effect of the entomophagous fungi *Beauveria bassiana* (bals.) Vuill. and *Metarrhizium anisopliae* (Metsch.) Sorok. on warm-blooded animals.

10353

**ENVIRONMENT**

Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper.

10247

On the environment of *Polymorphus minutus* (*Acanthocephala*) in ducks.

10373

Physiological and biochemical contribution to fume damage research. 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter.

10432

**ENVIRONMENTAL EFFECTS**

Experimental studies on diapause in stoneflies. III. Eggs of *Brachyptera risi* (Morton).

10051

**ENZYMES**

Hydrogen-ion concentration and the digestive enzymes in *Cictus signatus* Walker (Heteroptera: Coreidae).

10063

Immune reaction in insects. I. Lysozyme as the fundamental antibacterial factor in the humoral preventive mechanism of the insects.

10077

Studies on phosphohexosomerase (d-glucose-6-phosphate ketol isomerase) from the Indian honeybee, *Apis indica* Fabricius.

10098

A third locus (lpo) affecting pyridoxal oxidase in *Drosophila melanogaster*.

10152

The effect of gastro-intestinal secretions on taeniid egg membranes.

10374

Biodegradation of pesticides.

10422

Delayed lethal effect of 2,4-dichlorophenoxyacetic acid on bacteria.

10429

**EPERMENIIDAE**

Results of an Austrian Lepidoptera collecting trip to Syria and Lebanon. (Part V.: Epermeniidae).

9894

*Ochromolopis icetella* Hb. (Lepidoptera, Epermeniidae) in Finland, probably transported by windstorm.

9912

**EPHEMERAL FEVER**

The occurrence of ephemeral fever of cattle in Victoria in 1968.

10347

**EPHEMEROPTERA**

The life histories and drifting of the Plecoptera and Ephemeroptera in a dartmoor stream.

10001

**EPHYDRIDAE**

A new species of *Ephydrella* Tonnoir and Malloch (Diptera: Ephydriidae).

9887

**EPIDEMIOLOGY**

Incidence of bluetongue reported calendar year 1967.

10325

**EPIDERMOPTIDAE**

A new species of *Epidermoptes* from a South Dakota pheasant (Acarina: Epidermoptidae).

9917

**EPINOTIA TSUGANA**

Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests.

10257

**EPIPHYTIC**

The epiphytic of yellow orange leaf disease of rice in 1966 in Thailand.

10197

# SUBJECT INDEX

- EPITHELIUM**
- EPITHELIUM**  
Cell physiology investigations of the action of new triazine derivatives on petiole epidermis of *Solanum tuberosum* L. 10431
- EPIZOOTIC DISEASES**  
The occurrence of ephemeral fever of cattle in Victoria in 1968. 10347  
Transmission of histomoniasis with male *Heterakis gallinarum* (Nematoda). 10383
- EQUINE ENCEPHALOMYELITIS VACCINES**  
Equine vaccines and vaccinations. 10344
- EQUINE INFLUENZA VACCINES**  
Equine vaccines and vaccinations. 10344
- EQUINE RHINOPNEUMONITIS VACCINES**  
Equine vaccines and vaccinations. 10344
- ESOPHAGUS**  
Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine. 10339
- ESTERASES**  
A simple starch-gel electrophoretic method to investigate esterase inhibition by common organic insecticides. 10044
- ETHYL ALCOHOL**  
Nutrition of *Xyleborus ferrugineus*. I. Ethanol in diets as a tunneling (feeding) stimulant. 10082
- ETHYL ETHER**  
An integrated technique to study the effects of fumigants on respiration of insects. 9972
- ETHYL METHANESULFONATE**  
Ethyl methanesulfonate (EMS) induced mutations in *Drosophila melanogaster*. 10147  
Variations of the culture of *Fusarium moniliforme* induced by N-nitrosoethylurea and ethyl methanesulfonate. 10435
- ETHYL N,N-DIPROPYLTHIOCARBAMATE**  
EPTC effects on sicklepod petiolar fatty acids. 10315
- ETHYL O,O-DIMETHYLDITHIOPHOSPHORYL-1-PHENYL ACETATE**  
Gas chromatographic determination of ethyl O,O-dimethyldithiophosphoryl-1-phenyl acetate in technical grade cidial and its 50 percent liquid formulation. 10457
- ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE, O**  
Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131
- ETHYLENE**  
Chemical stimulation of ethylene evolution and bud growth. 10300  
Reversion of senescence: Effects of 2,4-dichlorophenoxyacetic acid and indoleacetic acid on respiration, ethylene production, and ripening of banana fruit slices. 10452
- ETHYLTHIOETHYL O,O-DIMETHYLPHOSPHORODITHIOATE, S-(2-**  
Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug. at seedling stage. 10251
- EUBLEMMA**  
A comparative biological study of three ceroplastes species (Hem. Coccidae) and their natural enemies. 9990
- EUCELATORIA ARMIGERA**  
Laboratory studies of *Eucelatoria armigera*, a tachinid parasite of *Heliothis* spp. 10040
- EULOPHIDAE**  
New record of hymenopterous parasites of *Phytomyza atricornis* (Meigen), a serious pest of pea. 10259
- EUMENIDAE**  
A new sub-genus and species of the Eumeninae (Hymenoptera, Diptera) from the Bulgarian fauna. 9868  
A new name for the genus *Cyrtolabus* van der Vecht (Hymenoptera, Eumenidae). 9947
- EXPERIMENTAL INSECTS**  
Immune reaction in insects. I. Lysozyme as the fundamental antibacterial factor in the humoral preventive mechanism of the insects. 10077
- EXTRACTION**  
Rapid method for the extraction, cleanup, and GLC determination of toxic residues of temik. 10471  
Acetonitrile extraction and determination of carbaryl in fruits and vegetables. 10475
- EXTRACTION TECHNIQUES**  
Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa. 10480
- EYELIDS**  
The incidence of demodectic mites in the eyelids of various mammalian hosts. 10363
- EYES**  
Elm spanworm eye size depends upon sex and diet. 10000  
Eyes of the female two-spotted spider mite, *Tetranychus urticae*. I. Morphology. 10067  
Isolation of *Salmonella pullorum* from a caseous nodular in the orbital region of a chick Arbor Acres breed. 10338  
Dirofilaria immitis from the eye of a dog. 10376
- FARNESOL**  
Biochemical studies on the terpene metabolism in sweet potato root tissue with black rot. Effect of C10- and C15-terpenols on acetate-2-14C incorporation into ipomeamarone. 10446
- FAT BODY**  
Vitellogenic blood protein synthesis by insect fat body. 10083
- FATS**  
DDT in fats on Antarctic animals. 10405  
Collaborative, study of the sweep co-distillation cleanup for chlorinated pesticide residues in edible fats and oils. 10472
- FATTY ACIDS**  
EPTC effects on sicklepod petiolar fatty acids. 10315
- FECES**  
*Pneumostromylus tenuis* in moose on a deer-free island. 10375
- FEED**  
Official proceedings. Second annual Pacific Northwest Animal Nutrition Conference, at Pacific Science Center, Seattle, Washington, November 9-10, 1967. 10350  
Problems with DDT in fish culture operations. 10406
- FEED ADDITIVES**  
Gas chromatographic method for determination of diethylstilbestrol in feeds. 10356
- FEEDING**  
Studies on brood rearing activity of Indian honey bee *Apis indica* F. under Delhi conditions. 9974  
The behavior of newly emerged boll weevils. 10016  
Nutrition of *Xyleborus ferrugineus*. I. Ethanol in diets as a tunneling (feeding) stimulant. 10082  
Odorous house ant feeds on photographic film. 10386
- FEET**  
Foot lameness in pigs. 10332
- FENAC**  
Control of johnsongrass on drainage ditchbanks in sugarcane. 10297  
Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants. 10303
- FENTHION**  
A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhyzopertha dominica* (F.) in wheat. 10237
- FENURON**  
Selective grass control with siduron. 10294
- FERBAM**  
Volatile metabolites from dimethyldithiocarbamate fungicide residues. 10441
- FERRISIA VIRGATA**  
First record of *Aewasius advena* Compere (Encyrtidae: Hymenoptera) from India as a parasite of *Ferrisia virgata* Ckll.. 9932
- FERTILITY**  
Damage to testes and recovery of fertility in boll weevils fed chemosterilants. 10100
- FERTILIZERS**  
Influence of pesticides and fertilizers on the behaviour of phytophagous mites in orchards and under laboratory conditions. 10065  
Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants. 10303  
Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value. 10445
- FIBRINOGEN**  
*Babesia argentina*: Serum changes in infected calves. 10345
- FICALBIA**  
A new species of *Ficalbia* (Ravenalites) from Cambodia (Diptera: Culicidae). 9910
- FIELD STUDIES**  
Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans *Glugea gasti* and *Mattesia grandis*. 10068  
Structure, stability, and energy flow in plants and arthropods in a sericea *Lespedeza* stand. 10255
- FIELD TEST**  
Accurately predicting a herbicides potential. 10313
- FILARIASIS**  
Analytical studies on extraets of *Litomosoides carinii*. 10341



# SUBJECT INDEX

## FUNGUS DISEASES (PLANTS)

- FILM**  
Odorous house ant feeds on photographic film. 10386
- FISH**  
Consequences of insecticide use of nontarget organisms. 10402  
Problems with DDT in fish culture operations. 10406  
Uptake of dieldrin by isolated perfused gills of rainbow trout. 10408  
Industry's concern with pesticide residues. 10411  
Extraction, separation, and GLC detection of silvex and its propylene glycol ether ester in fish tissue. 10421
- FISHERIES**  
Determination and measurement of insecticide dust particles in atmospheres adjacent to orchards. 10399
- FISHERY PRODUCTS**  
Problems with DDT in fish culture operations. 10406
- FLAGELLA**  
Experimental infections with *Bacillus* larvae. I. A strain with a morphological marker. 10020
- FLAX**  
Reaction of flax to dicamba applied at several stages. 10301  
Competition between flax and wild buckwheat. 10440
- FLOTATION**  
Recovery of mites from peat and mineral soils using a new floatation method. 9975
- FOLIAR APPLICATION**  
Repeated, foliar applications of herbicides on johnsongrass. 10291
- FOOD**  
Methods of determining pesticides in food products. (JPRS 34,946). 10418
- FOOD ADDITIVES**  
Notice of filing of petition for food additives. 10417
- FOOD ANALYSIS**  
Determination and measurement of insecticide dust particles in atmospheres adjacent to orchards. 10399
- FOOD CONTAMINATION**  
Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods. 10409
- FOOD HABITS**  
Substrate preferences and invasion behaviour exhibited by larvae of *Nilodorum brevibuca* Freeman (Chironomidae) under experimental conditions. 10066  
The artificial feeding of phosphamidon to *Myzus persicae*: ii. The effects of phosphamidon on liquid uptake through a parafilm membrane. 10086
- FOOD PLANTS**  
Effect of different food plants on the larval and post-larval development on *Diacrisia obliqua* Walker. 10084
- FOOD POISONING**  
Problems in raising ducks. 10357
- FOOT ROT (ANIMALS)**  
Foot lameness in pigs. 10332
- FOOT-AND-MOUTH DISEASE**  
Vaccinated cattle.....can harbor foot and mouth disease. 10331
- FORAGE PLANTS**  
Twenty-six varieties of forage crops evaluated for resistance to feeding by *Melanoplus sanguinipes*. 10246
- FOREST CUTTING SYSTEMS**  
Relationship between amount of thinning, time of care, and damages caused by red deer. 10323
- FOREST INSECTS**  
Helicopter sprayers may rescue infested forests. 9959  
Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper. 10247  
Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests. 10257  
Needle miner infestations in lodgepole pine east of the Sierra crest. 10267
- FORESTRY**  
Chemical preparations in the services of agriculture and forestry. 10169
- FORMICIDAE**  
A new Malayan species of the ant genus *Epitritus* and a related new genus from Singapore (Hymenoptera: Formicidae). 9944  
A new record, *Dorylus labiatus* Shuck. (Hymenoptera: Formicidae) as a predator of *Microtermes mycophagus* Desn. (Isoptera: Termitidae). 10112  
Odorous house ant feeds on photographic film. 10386
- FORMULATIONS**  
Beetle. 10137  
Gas chromatographic determination of ethyl O,O-dimethyldithiophosphoryl-1-phenyl acetate in technical grade cidal and its 50 percent liquid formulation. 10457  
Release rates and herbicidal activity of slow release granular formulations. (abstract). 10459
- FOWL CHOLERA**  
Problems in raising ducks. 10357
- FRAXINUS**  
*Inonotus hispidus*. 10218
- FRUIT**  
The identification and distribution of *Quadrastipidiotus* species (Homoptera: Diaspididae) on pome and stone fruits in Australia. 9876  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032  
Ir-2, a germ plasma bank of virus-free fruit tree clones. 10184  
Biological control of olive scale, *Parlatoria oleae* (Colvee), in a deciduous fruit orchard in California. 10252  
Easy-to-kill pests of fruit trees...codling moth. 10253  
Acetonitrile extraction and determination of carbaryl in fruits and vegetables. 10475
- FUMARIA OFFICINALIS**  
The response of fumitory to various herbicides. 10293
- FUMIGANTS**  
An integrated technique to study the effects of fumigants on respiration of insects. 9972  
Pesticides and clay minerals. 10397  
Analysis of grains for multiple residues of organic fumigants. 10416
- FUMIGATION**  
Problems in raising ducks. 10357
- FUNGI**  
Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine. 10339
- FUNGICIDE RESISTANT FUNGI**  
Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223
- FUNGICIDES**  
Fungicidal control of rice diseases. 10170  
Control of barley loose smut in Wisconsin in 1966 and 1967. 10171  
Designation used, chemical name, source, and trademark name of each fungicide mentioned in this compilation. 10172  
Effect of CL-50, a new synthetic fungicide on certain fungi. 10173  
Chemotherapy of loose smut of barley in Canada. 10179  
Fungicidal composition containing zinc dithiocarbamate. Patent 3,458,638. 10190  
Effect of chemical treatments on the control of. 10191  
Seed-mycoflora of musk-melon. 10193  
Effectiveness of fungicides in controlling barley loose smut. 10196  
The fungitoxic mechanisms in quinoline compounds and their chelates. 10202  
Fungicidal control of smut diseases of cereals. 10207  
Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223  
Metabolism of organic pesticide chemicals in higher plants. 10278  
Volatile metabolites from dimethyldithiocarbamate fungicide residues. 10441  
N-(substituted-benzoyl) aminoaceto- and aminopropionitriles. Patent 3,457,294. 10460  
Chemistry of fungicides. 10476
- FUNGUS CULTURES**  
Effect of CL-50, a new synthetic fungicide on certain fungi. 10173  
Variations of the culture of *Fusarium moniliforme* induced by N-nitrosoethylurea and ethyl methanesulfonate. 10435
- FUNGUS DISEASES (PLANTS)**  
Control of barley loose smut in Wisconsin in 1966 and 1967. 10171  
Chemical control of loose smut in barley in Minnesota. 10174  
Nutrition of the silver-leaf pathogen *Stereum purpurcum* (Pers.) Fri. 10175

# SUBJECT INDEX

## FUSARIUM

- Interaction between chilli mosaic and powdery mildew in tobacco. 10176
- A leaf spot disease of *Cyamopsis tetragonoloba* caused by *Curvularia lunata* in India. 10177
- Post-infection changes in the sugar content of leaf-spot infected barley. 10178
- Chemotherapy of loose smut of barley in Canada. 10179
- Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium* wilt with Thiabendazole and Benlate. 10181
- List of publications on fungus and insect defects in forest products. 10182
- Verticillium* wilt of tobacco. VI. The influence of roots and stems on *Verticillium* wilt symptoms in tobacco. 10186
- Rhizoctonia* leaf rot of colocasia in India. 10188
- A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum. 10189
- Effect of chemical treatments on the control of. 10191
- Control of loose smut of wheat and barley in Arkansas with fungicides. 10192
- Chemical control of wheat and barley loose smut. 10194
- Effect of two systemic fungicides on control of loose smut in wheat. 10195
- Effectiveness of fungicides in controlling barley loose smut. 10196
- Standardization of the international race numbers of *Pyricularia oryzae*. 10198
- Efficacy of oxathiin fungicides for control of loose smut in barley. 10199
- Preliminary observations on the treatment of wheat and barley with a fungicide to control loose smut in England. 10200
- Colletotrichum nigrum* from eggplant. A new record from India. 10201
- The fungitoxic mechanisms in quinoline compounds and their chelates. 10202
- Fungicidal control of smut diseases of cereals. 10207
- Toxic metabolite of *Aspergillus niger* and its role in onion rot disease. 10208
- Deleterious effect of certain fungitoxicants on the formation of Mycorrhizae on corn by *Endogone fasciculata* and on corn root development. 10209
- Breeding for rust resistance. Advances in genetics give hope for total immunity. 10211
- Survival of root-infecting fungi in soil. XII. Germination and survival of endoconidia and chlamydospores of *Thielaviopsis basicola* in fallow soil and in soil adjacent to germinating bean seed. 10213
- Chemical control of loose smut in barley. 10214
- Heterobasidion annosum*. 10215
- Phellinus igniarius*. 10216

- Phellinus pomaceus*. 10217
- Inonotus hispidus*. 10218
- Results obtained with a systemic oxathiin fungicide in France. 10220
- The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl-4-oxathiin. 10222
- Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223
- Comparison of mycelial and Sclerotial inoculum of *Macrophomina phaseoli* in the mortality of pine seedlings under varying soil conditions. 10225
- Studies on physiology of *Helminthosporium australiense* the causal agent of a leaf spot disease of bajra. 10226
- Preliminary note on the occurrence of black point disease of wheat in India. 10228
- Seed treatment trial, 1967. 10229
- Verticillium* wilt of tobacco. VIII. Movement of conidia of *Verticillium dahliae* Kleb. in tobacco plants. 10230
- Verticillium* wilt of tobacco. VII. Pathogenicity of isolates of *Verticillium dahliae* Kleb. on New Zealand tobacco. 10231
- Response to parasites. 10232
- ### FUSARIUM
- Effect of CL-50, a new synthetic fungicide on certain fungi. 10173
- ### FUSARIUM MONILIFORME
- Variations of the culture of *Fusarium moniliforme* induced by N-nitrosoethylurea and ethyl methanesulfonate. 10435
- ### GALL-MAKING INSECTS
- Gall-inhabiting *Liothrips Uzel* from India. 9867
- Some observations on *Cynips quercus folii* L. galls on *Quercus robur* L. in Bydgoszcz province. 10203
- ### GALLERIA MELLONELLA
- Study of denonucleosis of *Lepidoptera* by the immunological gel diffusion method. 10019
- Diplogasterid nematodes (*Diplogasteridae*: *Rhabditida*) and their relationship to insect disease. 10094
- Isolation and biological properties of the juvenile hormone. 10106
- ### GAMMA RAYS
- Radiation sensitivity of twelve species of arthropods. 10069
- Sensitivity to gamma radiation of *Tribolium confusum* eggs at various developmental stages. 10136
- Interaction between chronic irradiation, vibration, and centrifugation in the production of genetic effects in *Drosophila*. 10148
- ### GARDENS
- In your garden - weeds: Robbers, but not always bad. 10168
- ### GASTROINTESTINAL SYSTEM
- Hydrogen-ion concentration and the digestive enzymes in *Cletus signatus* Walker (*Heteroptera*: *Coreidae*). 10063
- Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine. 10339

- The effect of gastro-intestinal secretions on taeniid egg membranes. 10374
- ### GEESE
- The comparative pathology of duck plague in wild *Anseriformes*. 10342
- ### GELATIN
- Odorous house ant feeds on photographic film. 10386
- ### GELECHIIDAE
- Synonymy of *Keiferia glochinella* (Zeller) and related names (*Lepidoptera*: *Gelechiidae*). 9905
- ### GENES
- Chromosomal polymorphism and genetic load in *Drosophila pseudoobscura*. 10153
- Biochemical genetics of insecticide resistance in the housefly. 10163
- Operator constitutive mutations in the leucine operon of *Salmonella typhimurium*. 10329
- ### GENETICS
- Homologous lines of chromosome polymorphism in the natural populations of *Adirondack black fly* (*Diptera*, *Simuliidae*). 10150
- A *Salmonella typhimurium* involved in the regulation of isoleucine, valine and leucine biosynthesis. 10326
- ### GEOMETRIDAE
- Notes and considerations on the control of the cypress moth, *Catoria unipennaria* (Guen.) (*Lepidoptera*, *Geometridae*). 10261
- ### GERANIOI
- Biochemical studies on the terpene metabolism in sweet potato root tissue with black rot. Effect of C10- and C15-terpenols on acetate-2-14C incorporation into ipomeamarone. 10446
- ### GERM-FREE LIFE
- Ontogeny of the immune response. V. Further characterization of 19 S gamma G- and 7 S gamma G-immunoglobulins in the true primary immune response in germfree, colostrum-deprived piglets. 10340
- ### GHANA
- Biological studies in Ghana in the control of *Cadra cautella* (Wlk.), the tropical warehouse moth. 10391
- ### GIBBERELLIC ACID
- Effects of growth regulators and herbicides on germination of *Hydrilla turions*. 10306
- Effects of gibberellin A3 on fruit shape and subsequent seed dormancy of apple. 10453
- ### GIBBERELLINS
- Variations of the culture of *Fusarium moniliforme* induced by N-nitrosoethylurea and ethyl methanesulfonate. 10435
- ### GLOBULINS
- Ontogeny of the immune response. V. Further characterization of 19 S gamma G- and 7 S gamma G-immunoglobulins in the true primary immune response in germfree, colostrum-deprived piglets. 10340
- ### GLOSSINA
- The influence of temperature on reproduction and development in four species of *Glossina* (*Diptera*: *Muscidae*). 10028
- ### GLOSSINA MORSITANS
- Pupal duration in *Glossina morsitans orientalis* under conditions of constant temperature. 10091
- Lethal temperatures for puparia of *Glossina morsitans orientalis*. 10092



- GLUGEA GASTI**  
Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans *Glugea gasti* and *Mattesia grandis*. 10068
- GLYCERIDES**  
Sexual dimorphism in neutral lipid metabolism in the Indian-meal moth, *Plodia interpunctella* (Hubner). 10143
- GLYCOPROTEINS**  
Endrin induced alterations in bound carbohydrates in rat serum. 10423
- GLYCOSIDES**  
Discovery of sinigrin as a phagostimulant by *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 10433
- GOATS**  
The incidence of demodectic mites in the eyelids of various mammalian hosts. 10363  
Use of inert particles for the diagnosis of sheep cisticercosis. Bentonite test. 10367
- GRACILLARIIDAE**  
Two new Palearctic *Lithocolletis* species. (Preliminary description). 9884
- GRAIN**  
Fungicidal control of smut diseases of cereals. 10207  
The control of insects in bagged grain by the injection of dichlorvos. 10387  
Studies on the incidence and extent of damage due to insect pests in stored seeds--I. Cereal seeds. 10388  
Analysis of grain storage problems in India. 10390  
Analysis of grains for multiple residues of organic fumigants. 10416
- GRAMINELLA NIGRIFRONS**  
Corn stunt vector leafhopper attractancy to and oviposition preference for hybrid dent corn. II. *Graminella nigrifrons*. 9992
- GRANULOSES**  
Ultrastructural observations on the branched rods associated with some insect granuloses. 9960
- GRAPHOGNATHUS LEUCOLOMA**  
Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131
- GRASSES**  
Biology of the billbug *Sphenophorus venatus confluens*, a new pest of orchardgrass. 10047  
Selective grass control with siduron. 10294
- GRASSY SHOOT**  
Local lesion host for grassy shoot virus of sugarcane. 10224
- GRAZING**  
Bloat on *Dolichos lablab*. 10335
- GROWTH FACTORS**  
Control of aquatic plants with dithiodidecanoic acid. Patent 3,432,286. 10281
- GRYLLUS CAMPESTRIS**  
Intracellular activity in cricket neurons during the generation of behaviour patterns. 9968
- GUINEA PIGS**  
Case of rabies in guinea pig with long incubation period. 10348
- GYRINIDAE**  
Correction to the key of the European *Gyrinus* species. 9925
- GYRINUS**  
Correction to the key of the European *Gyrinus* species. 9925
- HABITATS**  
Gall-inhabiting *Liothrips Uzel* from India. 9867  
Description of the male, pupa, and larval habitat of *Nilobezzia brevicornis* (Diptera: Ceratopogonidae). 9963  
Seasonal changes in the distribution of the millipede *Cylindroiulus punctatus* (Leach) in decaying logs and soil. 9966  
A study of a pocket of scattered desert locust population in Rajasthan, India during 1966 with special reference to eye-stripes and biometrics. 10027
- HAEMATOBIA**  
Colonization of an island by the buffalo fly, *Haematobia exigua*. 10004
- HAMSTERS**  
Immune lysis of rabies virus-infected cells. 10361
- HAPLOTHRIPS**  
The biology, mode of attack and damage caused by the thrips, (*Haplothrips tritici* Kurd) to wheat crops. 10235
- HEAT TREATMENT**  
Freeing alfalfa clones from alfalfa mosaic virus by heat treatment. 10185
- HELICOPTERS**  
Helicopter sprayers may rescue infested forests. 9959
- HELIOTHIS**  
Laboratory studies of *Eucelatoria armigera*, a tachinid parasite of *Heliothis* spp. 10040
- HELIOTHIS ZEA**  
Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper. 10247
- HELMINTHOSPORIUM**  
Studies on physiology of *Helminthosporium australense* the causal agent of a leaf spot disease of bajra. 10226  
Preliminary note on the occurrence of black point disease of wheat in India. 10228
- HELMINTHOSPORIUM HAWAIIENSE**  
Effect of CL-50, a new synthetic fungicide on certain fungi. 10173
- HELMINTHOSPORIUM SATIVUM**  
Post-infection changes in the sugar content of leaf-spot infected harley. 10178
- HELMINTHOSPORIUM STENOSPILUM**  
Influence of light on sporulation by *Helminthosporium stenospilum*. 10183
- HEMAGGLUTINATION**  
Recent techniques for serodiagnosis of hydatidosis. V. The importance of tests of bentonite, latex and indirect hemagglutination in the field sanitation of hydatidosis. 10372
- HEMEROCAMPA PSEUDOTSUGATA**  
Helicopter sprayers may rescue infested forests. 9959
- HEMOGLOBIN (PLANTS)**  
Effect of dichloro diphenyl trichloro-ethane (DDT) on leghemoglobin content of root nodules of *Phaseolus aureus* (green gram). 10438
- HEMOLYMPH**  
Proteins in the spermathecae and haemolymph of the queen bee (*Apis mellifica* L. var. *ligustica* Spin.). 10057  
The absorption of p,p'-DDE by larvae of *Aglais urticae* (Lepidoptera: Nymphalidae). 10078
- HEPTACHLOR**  
Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131  
Gas chromatographic characteristics of chlordane. I. Effect of an aqueous environment on the heptachlor component. 10458  
Comparison of ten methods for the analysis of milk for residues of chlorinated pesticides. 10470  
Conversion of heptachlor to its epoxide. 10478  
Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479
- HEPTACHLOR EPOXIDE**  
Industry's concern with pesticide residues. 10411  
Conversion of heptachlor to its epoxide. 10478  
Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479
- HERBICIDE APPLICATION**  
Reaction of flax to dicamba applied at several stages. 10301  
Herbicide screening tests during 1967 in agricultural crops and potted herbs. 10307  
Response of soybeans to 2,4-D, dicamba, and picloram. 10312  
An evaluation of herbicide incorporation equipment. 10483
- HERBICIDE RESIDUES**  
Gas chromatographic determination of residues of Dalapon in several substrates. 10410  
Extraction and gas-liquid chromatographic determination of vernolate in soil. 10412  
Notice of filing of petition for food additives. 10417
- HERBICIDES**  
Metabolism of trifluralin in peanuts and sweet potatoes. 10273  
Response of tropical vegetation to herbicides. 10275  
Light intensity and the absorption and translocation of 2,4,5-T by woody plants. 10276  
Metabolism of organic pesticide chemicals in higher plants. 10278  
African feather grass--a weed worth watching. 10279  
Effects of several herbicides on yews and Japanese maples. 10280  
A method for spraying individual trees. 10282  
Downy brome control by soil-active herbicides for revegetation of rangelands. 10283  
Behavior of pyrazon in soil. 10286  
Absorption and translocation of pyrazon by plants. 10287

# SUBJECT INDEX

## HERBS

- Effects of pyrazon on growth, photosynthesis, and respiration. 10288
- 1967 pre-emergence weed control in potatoes on Long Island. 10289
- Phytotoxicity of bemethylated analogs of diphenamid. 10290
- Repeated, foliar applications of herbicides on johnsongrass. 10291
- Translocation of assimilates and dalapon in established johnsongrass. 10292
- The response of fumitory to various herbicides. 10293
- Basis for selectivity of linuron on carrot and common ragweed. 10295
- Weed control in sugarbeets. 10296
- Control of johnsongrass on drainage ditchbanks in sugarcane. 10297
- Effect of nitrogenous materials on the uptake of triazine herbicides. 10298
- Mechanisms of action of herbicides. 10299
- Chemical stimulation of ethylene evolution and bud growth. 10300
- Reaction of flax to dicamba applied at several stages. 10301
- Effect of soil water stress and soil temperature on translocation of diuron. 10302
- Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants. 10303
- Translocation of the herbicide dicamba in purple nutsedge, *Cyperus rotundus*. 10304
- Effects of growth regulators and herbicides on germination of *Hydrilla* turions. 10306
- Herbicide screening tests during 1967 in agricultural crops and potted herbs. 10307
- Absorption and penetration of picloram in potato tuber discs. 10308
- Effects of 2,4,5-T during the approach of woody plant dormancy. 10311
- Response of soybeans to 2,4-D, dicamba, and picloram. 10312
- Accurately predicting a herbicides potential. 10313
- A sprayer for application of small amounts of herbicides to flats. 10314
- EPTC effects on sicklepod petiolar fatty acids. 10315
- Delayed lethal effect of 2,4-dichlorophenoxyacetic acid on bacteria. 10429
- Cell physiology investigations of the action of new triazine derivatives on petiole epidermis of *Solanum tuberosum* L. 10431
- Influence of atrazine (2-chloro-4-ethylamino-6-isopropylamino-5-triazine) on auxin metabolism of plants. 10434
- Spray gel agent solves drift problem. 10456

- Release rates and herbicidal activity of slow release granular formulations. (abstract). 10459
- Chemistry of herbicides. 10464
- Atrazine degradation in two soil profiles. 10477
- An evaluation of herbicide incorporation equipment. 10483
- An evaluation of herbicide incorporation equipment. 10484
- HERBS**
- Herbicide screening tests during 1967 in agricultural crops and potted herbs. 10307
- HETERAKIS GALLINARUM**
- Transmission of histomoniasis with male *Heterakis gallinarum* (Nematoda). 10383
- HETEROPTERA**
- Presentation of aquatic heteropteran fauna II, aquatic Heteroptera from Evora, Portugal. 9922
- HETEROTYLENCHUS ABERRANS**
- Nematode parasites of the face fly and the onion maggot in France and Denmark. 10120
- HETEROTYLENCHUS AUTUMNALIS**
- Nematode parasites of the face fly and the onion maggot in France and Denmark. 10120
- HEXANE**
- Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479
- HEXOSES**
- Analytical studies on extracts of *Litosomoides carinii*. 10341
- HIBERNATION**
- Growers join forces to battle the boll weevil. 10233
- HILL REACTION**
- Mechanisms of action of herbicides. 10299
- Effects of ammonium thiocyanate on carbohydrate metabolism in the cotton plant. 10455
- HIPPOBOSCIDAE**
- Records of pupiparous Diptera (Hippoboscidae) on birds in India--III. 10365
- HISTERIDAE**
- A key to the species of *Carcinops* Marseul (Coleoptera, Histeridae) associated with stored products, including *C. troglodytes* (Paykull) new to this habitat. 9901
- HISTOCHEMISTRY**
- Retention of intra-cellular potassium by the housefly. 10113
- HISTOLOGY**
- Ancylostoma caninum*: Fine structure of intestinal epithelium. 10377
- Spirurata of animals and humans and the diseases. 10382
- HISTOMONAS MELEAGRIDIS**
- The fine structure and method of feeding of the tissue parasitizing stages of *Histomonas meleagridis*. 10378
- HOG CHOLERA**
- Hog cholera and other communicable swine diseases. Miscellaneous amendments. 10328
- HOG CHOLERA VACCINES**
- Inactivated hog cholera virus vaccine. Patent 3,456,053. 10330

- HOG CHOLERA VIRUS**
- Inactivated hog cholera virus vaccine. Patent 3,456,053. 10330
- HOMOPTERA**
- Bulgarian grasshoppers (*Homoptera: Auchenorrhyncha*). 9928
- HOPLOPSYLLUS**
- Abundance of cottontails and their fleas at Red Bluff Ranch, New Mexico. 10007
- HORMONES**
- Sindbis virus multiplication and *Calliphora erythrocephala* (Meig.) metamorphosis. 9969
- Female specific protein: Biosynthesis controlled by corpus allatum in *Leucophaea maderae*. 10002
- Isolation and biological properties of the juvenile hormone. 10106
- HORSES**
- Equine vaccines and vaccinations. 10344
- The incidence of demodectic mites in the eyelids of various mammalian hosts. 10363
- The course of naturally acquired helminth infections of horses given regular anthelmintic treatment. 10380
- HUMAN DISEASES**
- Research on the synantropic flies in the Sofia area, in regard to their epidemiological importance. 10165
- Allergic responses to insects. 10166
- Spirurata of animals and humans and the diseases. 10382
- HUMANS**
- Consequences of insecticide use of nontarget organisms. 10402
- HUMIDITY**
- Development of *Chrotogonus trachypterus* (Blanch.) (Orthoptera: Pyrgomorphidae) in relation to different levels of temperature and humidity. 10026
- Water vapor sorption and humidity relationships in *Liposcelis* (Insecta: Psocoptera). 10053
- Oviposition and hatching in two species of ticks in relation to moisture deficit. 10119
- The response of fumitory to various herbicides. 10293
- Analysis of grain storage problems in India. 10390
- Survival of lyophilized *Bacillus popilliae* in soil. 10415
- HYACINTH DOLICHOS**
- Bloat on *Dolichos lablab*. 10335
- HYALOPHORA CECROPIA**
- Vitellogenic blood protein synthesis by insect fat body. 10083
- Isolation and biological properties of the juvenile hormone. 10106
- HYDROCARBONS**
- Identification of hydrocarbons from *Novomessor cockerelli*. 10138
- HYDROGEN-ION CONCENTRATION**
- Hydrogen-ion concentration and the digestive enzymes in *Cletus signatus* Walker (Heteroptera: Coreidae). 10063



- HYDROLOGY**  
Surface hydrology and pesticides. 10392
- HYDROLYSIS**  
The effect of gastro-intestinal secretions on taeniid egg membranes. 10374
- HYLEMYA ANTIQUA**  
Nematode parasites of the face fly and the onion maggot in France and Denmark. 10120
- HYLOBIUS RHIZOPHAGUS**  
Life history and damage of the pine root tip weevil, *Hylobius rhizophagus*, in Wisconsin. 10049
- HYMENOPTERA**  
New Mymaridae from Central Africa. (Hymenoptera: Chalcidoidea). 9916
- HYMENIA RECURVALIS**  
New parasite records on *Hymenia recurvalis* (Fabricius) (Lepidoptera: Pyralidae). 10087
- HYMENOLEPIS DIMINUTA**  
Pyruvate kinase and phosphoenolpyruvate carboxykinase activities of *Ascaris* muscle, *Hymenolepis diminuta* and *Schistosoma mansoni*. 10369
- HYMENOPTERA**  
Wasps attacking other insects. 9979
- HYPERTROPHY**  
A strain of nuclear-polyhedrosis virus causing extensive cellular hypertrophy. 10126
- HYPHANTRIA CUNEA**  
Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests. 10257
- ICHNEUMONIDAE**  
Oriental species of *Coesula* Cameron (Hymenoptera: Ichneumonidae). 9897  
Biology of *Agrothereutes tunethus* Haber. (Hym., Ichneumonidae) an ectoparasite of *Orygia duhia* Tausch. (Lep., Lymantriidae). 10054  
Contribution to the knowledge of the natural enemies of *Bissetia steniellus* (Hampson) (Lep.: Pyralidae). 10254
- ILEX OPACA**  
Light intensity and the absorption and translocation of 2,4,5-T by woody plants. 10276
- IMMUNITY**  
Vaccinated cattle.....can harbor foot and mouth disease. 10331  
Ontogeny of the immune response. V. Further characterization of 19 S gamma G- and 7 S gamma G-immunoglobulins in the true primary immune response in germfree, colostrum-deprived piglets. 10340  
Immune lysis of rabies virus-infected cells. 10361
- IMMUNIZATION**  
Equine vaccines and vaccinations. 10344  
Tablet dosage-form for the immunization of the intestinal tract with live virus preparations. Patent 3,458,621. 10359
- IMMUNOCHEMISTRY**  
Immune reaction in insects. I. Lysozyme as the fundamental antibacterial factor in the humoral preventive mechanism of the insects. 10077
- IMMUNOLOGY**  
Immunogenicity of concentrated and purified rabies vaccine of tissue culture origin. 10360
- INAZUMA DORSALIS**  
Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234
- INCLUSION BODIES**  
Case of rabies in guinea pig with long incubation period. 10348
- INDICATOR PLANTS**  
Water flora as indicators of irrigation water contamination by DDT. 10403
- INDICATORS (DISEASE)**  
Experimental infections with *Bacillus* larvae. I. A strain with a morphological marker. 10020
- INDOLEACETIC ACID**  
Reversion of senescence: Effects of 2,4-dichlorophenoxyacetic acid and indoleacetic acid on respiration, ethylene production, and ripening of banana fruit slices. 10452
- INFECTIOUS DISEASES**  
Foot lameness in pigs. 10332
- INHERITANCE**  
Inheritance of DDT-RESISTANCE in *Musca domestica* nebulosa Fabr. 10096
- INHIBITORS**  
A simple starch-gel electrophoretic method to investigate esterase inhibition by common organic insecticides. 10044  
Control of aquatic plants with dithiodiundecanoic acid. Patent 3,432,286. 10281  
Delayed lethal effect of 2,4-dichlorophenoxyacetic acid on bacteria. 10429
- INSECT ADAPTATION**  
An interesting case of adaptation to various hosts on the part of an egg parasite. 9985  
A model accounting for sympatry in water mites. 10076
- INSECT BEHAVIOR**  
Ear mites of the genus *Dicrocheles* (Acarina: Mesostigmata) found on noctuids in Hawkes Bay. 9882  
Studies on an Israel strain of *Anagyrus pseudococci* (Girault) (Hym., Encyrtidae). II. Some biological aspects. 9964  
Intracellular activity in cricket neurons during the generation of behaviour patterns. 9968  
Oviposition behaviour of the desert locust (*Schistocerca gregaria* Forsk.). 9971  
Observations on the life history and bionomics of *Oligotoma ceylonica ceylonica* Enderlein (Oligotomidae, Embioptera), commensal in the nest of the social spider *Stegodyphus sarasinorum* Karsch. 9978  
Deviate-ontogenies in the aphelinid male (Hymenoptera) associated with the ovipositional behavior of the parental female. 10006  
The behavior of newly emerged holl weevils. 10016  
Histological, behavioral, and symptomatic effects of Pentac on *Tetranychus urticae*. 10018  
Hexalure, an insect sex attractant discovered by empirical screening. 10025  
Laboratory demonstration of a chemical sex attractant in *Costelytra zealandica* (White) (Scarabaeidae: Coleoptera). 10030
- Studies and suggestions on the behaviour of moths at light. 10033  
Biology of the billbug *Sphenophorus venatus confluens*, a new pest of orchardgrass. 10047  
Spaced-out gregariousness in sycamore aphids *Drepanosiphum platanoides* (Schrank) (Homoptera, Callaphididae). 10050  
Biology of *Agrothereutes tunethus* Haber. (Hym., Ichneumonidae) an ectoparasite of *Orygia duhia* Tausch. (Lep., Lymantriidae). 10054  
The ecology of the Simuliidae in a Scottish river. 10062  
Influence of pesticides and fertilizers on the behaviour of phytophagous mites in orchards and under laboratory conditions. 10065  
Substrate preferences and invasion behaviour exhibited by larvae of *Nilodorum brevivucca* Freeman (Chironomidae) under experimental conditions. 10066  
Field observations on periodicity and site preference in oviposition by *Aedes aegypti* (L.) and related mosquitoes (Diptera: Culicidae) in Kenya. 10072  
Anatomical studies of the ovipositional site of plant hoppers and leaf hoppers on rice. 10075  
Biology and description of immature stages of *Orthacheta hirtipes*, a predator of *Cordilura* spp. 10080  
Nutrition of *Xylehorus ferrugineus*. I. Ethanol in diets as a tunneling (feeding) stimulant. 10082  
The predatory and reproductive behaviour of *Rhinocoris hicolor* and *R. tropicus* (Hemiptera: Reduviidae). 10085  
The artificial feeding of phosphamidon to *Myzus persicae*: II. The effects of phosphamidon on liquid uptake through a parafilm membrane. 10086  
Damage to testes and recovery of fertility in boll weevils fed chemosterilants. 10100  
The defensive behaviour of the stick insect *Onotophasma martini* (Griffini) (Orthoptera: Phasmatidae). 10103  
New approaches to the control of pest organisms. 10118  
Inhibition of the defense reaction of *Drosophila melanogaster* parasitized simultaneously by the wasps *Pseudeucoila bochei* and *Pseudeucoila mellipes*. 10122  
On the oviposition behaviour and development of *Sitophilus oryzae* Linn. in various natural foods. 10127  
A record of diurnal flight in *Dytiscus*. 10132  
The biology, mode of attack and damage caused by the thrips, (*Haplothrips tritici* Kurd) to wheat crops. 10235  
Wharf horer. 10385  
Odorous house ant feeds on photographic film. 10386
- INSECT BIOCHEMISTRY**  
Lactic dehydrogenase isozymes in the grasshopper. 9961  
The utilization of C14-labelled adenosine diphosphate during the in vitro respiration of housefly sarcosomes. 9984

# SUBJECT INDEX

## INSECT BIOLOGY

- On the odour components of the stink of two heteropteran bugs of India. 9989
- The neutral lipids from various organs of the termite *Macrotermes goliath*. 9991
- Variations in free amino acids in the larvae and pupae of *Chilo zonellus*. 9994
- Physico-organic chemical approach to the mode of action of organophosphorus insecticides. 10014
- A simple starch-gel electrophoretic method to investigate esterase inhibition by common organic insecticides. 10044
- Proteins in the spermathecae and haemolymph of the queen bee (*Apis mellifica* L. var. *ligustica* Spin.). 10057
- Hydrogen-ion concentration and the digestive enzymes in *Cletus signatus* Walker (Heteroptera: Coreidae). 10063
- Immune reaction in insects. I. Lysozyme as the fundamental antibacterial factor in the humoral preventive mechanism of the insects. 10077
- Studies on phosphohexoseisomerase (d-glucose-6-phosphate ketol isomerase) from the Indian honeybee, *Apis indica* Fabricius. 10098
- Sex attractant of female dermestid beetle *Trogoderma inclusum* Le Conte. 10105
- Isolation and biological properties of the juvenile hormone. 10106
- On the explosion chemistry of the hombardier beetle. Vi. On the chemistry of the smallest bombarider beetle *Paussus favieri*. XLIII. Communication on arthropod protective substances. 10111
- Retention of intra-cellular potassium by the housefly. 10113
- Identification of hydrocarbons from *Novomessor cockerelli*. 10138
- Refined defensive mechanisms in *Chrysomela scripta*. 10139
- Sexual dimorphism in neutral lipid metabolism in the Indian-meal moth, *Plodia interpunctella* (Hühner). 10143
- Biochemical genetics of insecticide resistance in the housefly. 10163

## INSECT BIOLOGY

- Ixodes pacificus* Cooley and Kohls, 1943: Its life-history and occurrence. 9962
- Studies on an Israel strain of *Anagrus pseudococci* (Girault) (Hym., Encyrtidae). II. Some biological aspects. 9964
- Life history and habits of *Sialis rotunda* and *S. californica* in western Oregon. 9965
- Note on *Prospaltella aurantii* How. (Hym., Aphelinidae), parasite of *Quadrastipidiotus pyri* Licht. in the Matitime Alps (Hom., Diaspididae). 9967
- Notes on the biology of *Diatracophaga striatalis* Townsend, tachinid parasite of *Proceras sacchariphagus* Boj. 9970
- Oviposition behaviour of the desert locust (*Schistocerca gregaria* Forsk.). 9971
- Effect of temperature on the development of mustard sawfly, *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 9976

- Observations on the life history and bionomics of *Oligotoma ceylonica ceylonica* Enderlein (Oligotomidae, Embioptera), commensal in the nest of the social spider *Stegodyphus sarasinorum* Karsch. 9978
- Meteorus versicolor* Wesm. var. *decoloratus* Ruthe (Hym., Braconidae), a new parasite of *Thaumetopoea pityocampa* Schiff. (Lep., Thaumetopoeidae). 9980
- A note on the occurrence of fruit fly maggots of *Dacus cucurbitae* Coq. in cecidomyiid galls of *Coccinia indica* in Andhra Pradesh. 9998
- The life histories and drifting of the Plecoptera and Ephemeroptera in a dartmoor stream. 10001
- Deviate-ontogenies in the aphelinid male (Hymenoptera) associated with the ovipositional behavior of the parental female. 10006
- Morphology and biology of a nest-producing mite, *Bakericheyla chanayi* (Acarina: Cheyletidae). 10015
- In vitro colonization of the goat biting louse, *Bovicola crassipes* and *B. limbata*. 10034
- Laboratory studies of *Eucelatoria armigera*, a tachinid parasite of *Heliothis* spp. 10040
- Biology of *Apanteles chilonis* and *A. flavipes* (Hymenoptera: Braconidae), parasites of *Chilo suppressalis*. 10045
- Biology of the billbug *Sphenophorus venatus confluens*, a new pest of orchardgrass. 10047
- Life history and damage of the pine root tip weevil, *Hylobius rhizophagus*, in Wisconsin. 10049
- Biology of *Agrothereutes tunethus* Haber. (Hym., Ichneumonidae) an ectoparasite of *Orygia dubia* Tausch. (Lep., Lymantriidae). 10054
- Insect parasites of the green peach aphid, *Myzus persicae* Sulz. and their control potential. 10059
- Age-distribution and abundance in populations of flour beetles. I. Experimental studies. 10071
- Biology and description of immature stages of *Orthacheta hirtipes*, a predator of *Cordilura* spp. 10080
- Effect of different food plants on the larval and post-larval development on *Diacrisia obliqua* Walker. 10084
- Isolation and biological properties of the juvenile hormone. 10106
- Biological notes on the bee *Tetralonia minuta* and its cleptoparasite, *Morgania histrio transvaalensis* (Hymenoptera: Anthophoridae). 10109
- Selection for lindane resistance in *Dermestes maculatus* de Geer (Coleoptera, Dermestidae). 10114
- Observations on the biology of *Lathromeroides* sp. (Trichogrammatidae: Hymenoptera) egg parasite of the leaf rolling weevil, *Apoderus sissu* Marshall (Curculionidae: Coleoptera) with notes on the host weevil. 10117
- Notes on the natural history of *Tenebrionidae* (Coleoptera) in Canterbury. 10140
- Continuous laboratory culture of the locust borer, *Megacyllene robiniae*. 10141
- Etology as the determining factor of the numerical distribution of the species in the fauna. 10144

- A new species of *Aedes* (*Stegomyia*) from Thailand (Diptera: Culicidae). 10164
- The biology, mode of attack and damage caused by the thrips, (*Haplothrips tritici* Kurd) to wheat crops. 10235
- Biology and control of leopard moth on pear trees in the United Arab Republic. 10242
- Biological control of olive scale, *Parlatoria oleae* (Colvée), in a deciduous fruit orchard in California. 10252
- Integrated control of insects. A challenge for scientists. 10265
- Biological control of *Cuscuta* spp. II. Biology and host-plant range of *Melanagromyza cuscutae* Hering (Dipt. Agromyzidae). 10272
- A study of the mites of the Gamasoidea superfamily (Parasitiformes) infesting small mammals on the Vitosha Mountain. 10364
- Wharf borer. 10385
- INSECT COLLECTING EQUIPMENT**
- A killing agent for use in light traps. 10090
- A simple collector for removing soil insects from an oil/water interface. 10095
- INSECT COLLECTION**
- List of insect and other invertebrate types in the Miguel Lillo Institute. (3rd list). 9902
- INSECT CONTROL**
- New approaches to the control of pest organisms. 10118
- A review of the use of insecticides on the main agricultural crops of the world--3. Section 3: Cotton. 10245
- INSECT DISEASES**
- Helicopter sprayers may rescue infested forests. 9959
- Ultrastructural observations on the branched rods associated with some insect granuloses. 9960
- Sindhis virus multiplication and *Calliphora erythrocephala* (Meig.) metamorphosis. 9969
- Spermatocyte granules in *Drosophila melanogaster*. 10003
- Fine structures of merozoites of *Babesia bigemina* in the ovaries of *Boophilus microplus* and *Boophilus decoloratus*. 10012
- Microscopical studies on the development of *Babesia ovis* in *Rhipicephalus bursa* (Ixodoidea). I. Development in female ticks after repletion. 10013
- Study of denosucleosis of Lepidoptera by the immunological gel diffusion method. 10019
- Experimental infections with *Bacillus* larvae. I. A strain with a morphological marker. 10020
- Antennopsis gallica* Heim and Buchli (hyphomycetes: Glocephales), an entomogenous fungus on subterranean termites in Florida. 10022
- Course of sporulation of *Bacillus popilliae* in liquid medium containing activated carbon. 10029
- Lethargy, a new virus of *Melolontha melolontha* L. larvae (Coleoptera, Scarabaeidae). 10036
- Leaching of the nuclear-polyhedrosis virus of *Trichoplusia ni* from soil. 10041



- Laboratory and field experiments on the effectiveness of purified and non-purified nuclear polyhedral virus of *Lymantria dispar* L.. 10061
- Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans *Glugea gastri* and *Mattesia grandis*. 10068
- Diplogasterid nematodes (Diplogasteridae: Rhabditida) and their relationship to insect disease. 10094
- Nematode parasites of the face fly and the onion maggot in France and Denmark. 10120
- A strain of nuclear-polyhedrosis virus causing extensive cellular hypertrophy. 10126
- Fuseaux virus of a South American Scarabaeidae. 10133
- The histopathology of a nuclear polyhedrosis in larvae of the cabbage looper, *Trichoplusia ni*, related to symptoms and mortality. 10134
- Changes in chromosomes induced by different DNA virus in cells of *Rhynchosciara angelae*. 10158
- INSECT DISSEMINATION**
- Ochromolopis icetella* Hh. (Lepidoptera, Epermeniidae) in Finland, probably transported by windstorm. 9912
- Colonization of an island by the buffalo fly, *Hacmatobia exigua*. 10004
- INSECT ECOLOGY**
- The larvae of Odonata in the vascular territory of stagnant waters in Bulgaria. 9872
- Lathridius bifasciatus* Reitt. (Col., Lathridiidae) habitats. 9878
- Description of *Dendrocercus* (tmacrostigma) noumeae sp. nov. from New Caledonia (Ceraphronoidea, Megaspilidae). 9885
- A new species of *Chrysomela* (Coleoptera, Chrysomelidae)-an important component of the Taimyr Peninsula biocoenoses. 9918
- Life history and habits of *Sialis rotunda* and *S. californica* in western Oregon. 9965
- The influence of ecological and genetic factors on the birth and death of *Macrocheles robustulus* (Berlese, 1904). 10005
- Deviate-ontogenies in the aphelinid male (Hymenoptera) associated with the ovipositional behavior of the parental female. 10006
- Studies on the ecology of larval Tipulinae (Diptera, Tipulidae). 10011
- Ecological research in the Lamto Savannah (Ivory Coast): Annual cycle of the population size and biomasses of arthropods in the herbaceous stratum. 10017
- Aquatic insect communities of a small stream on Mont St. Hilaire, Quebec. 10060
- The ecology of the Simuliidae in a Scottish river. 10062
- Age-distribution and abundance in populations of flour beetles. I. Experimental studies. 10071
- A model accounting for sympatry in water mites. 10076
- Etology as the determining factor of the numerical distribution of the species in the fauna. 10144
- The parasitism of gamasid mites (Gamasoidea) on birds. 10145
- Symposium on the principles of the application of microbiological preparations in nature. 10249
- Structure, stability, and energy flow in plants and arthropods in a sericea Lespedeza stand. 10255
- Integrated control of insects. A challenge for scientists. 10265
- INSECT EGGS**
- Description of immature stages of Coreidae. 3. *Archimerus alternus*. 9956
- Description of immature stages of Coreidae. 1. *Euthochtha galeator*. 9957
- The external morphogenesis of grasshopper embryos. 9987
- Effect of temperature on water absorption, development, and hatching in eggs of the prairie grain wireworm, *Ctenicera destructor*. 9999
- Temperature effects on embryonic development in insects. 10035
- Biology of the billbug *Sphenophorus venatus confluens*, a new pest of orchardgrass. 10047
- Experimental studies on diapause in stoneflies. III. Eggs of *Brachyptera risi* (Morton). 10051
- Field observations on periodicity and site preference in oviposition by *Aedes aegypti* (L.) and related mosquitoes (Diptera: Culicidae) in Kenya. 10072
- Water uptake and embryonic development in eggs of *Chorthippus brunneus* Thunberg (Saltatoria: Acrididae). 10079
- Oviposition and hatching in two species of ticks in relation to moisture deficit. 10119
- Sensitivity to gamma radiation of *Tribolium confusum* eggs at various developmental stages. 10136
- INSECT EVOLUTION**
- Spiracles of adult Scarabaeoidea (Coleoptera) and their phylogenetic significance. I. The abdominal spiracles. 9934
- Spermatophores of the Blattaria. 10024
- Seasonal evolution of the honey bee thermogenesis. Oxygen consumption of the isolated bee at five different temperatures in summer and in winter. 10123
- Evolution of fitness. IV. Genetic evolution of inter-specific competitive ability in *Drosophila*. 10146
- Autosomal fragmentations and fusions in Odonata and their evolutionary implications. 10157
- INSECT FLIGHT**
- Locust wind receptors. I. Transducer mechanics and sensory response. 9981
- Locust wind receptors. III. Contribution to flight initiation and lift control. 9982
- Locust wind receptors. ii. Interneurons in the cervical connective. 9983
- A record of diurnal flight in *Dytiscus*. 10132
- INSECT GENETICS**
- A new *Polymixis* HB. of Spain. *Polymixis lajonquierei* Brsn. (Supplemental description (1)) contribution to the study of Noctuidae trifinae 159(2). 9875
- Spermatocyte granules in *Drosophila melanogaster*. 10003
- The influence of ecological and genetic factors on the birth and death of *Macrocheles robustulus* (Berlese, 1904). 10005
- Evolution of fitness. IV. Genetic evolution of inter-specific competitive ability in *Drosophila*. 10146
- Ethyl methanesulfonate (EMS) induced mutations in *Drosophila melanogaster*. 10147
- Interaction between chronic irradiation, vibration, and centrifugation in the production of genetic effects in *Drosophila*. 10148
- On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants. 10149
- Meiosis in the grasshopper: Chiasma frequency after elevated temperature and X-rays. 10151
- A third locus (lpo) affecting pyridoxal oxidase in *Drosophila melanogaster*. 10152
- Chromosomal polymorphism and genetic load in *Drosophila pseudoobscura*. 10153
- Chromosome behavior under the influence of claret-nondisjunctional in *Drosophila melanogaster*. 10154
- Segregation distorter in *D. melanogaster* males: An effect of female genotype on the segregation ratio. 10155
- Population genetics in the American tropics. IV. Temporal changes effected in natural populations of *Drosophila melanogaster* from Colombia. 10156
- A molecular approach to the study of genic heterozygosity in natural populations. IV. Patterns of genic variation in central, marginal and isolated populations of *Drosophila pseudoobscura*. 10159
- Position effect on DNA transcription and replication. 10160
- Experimental evidence for factors affecting the relative efficiency of indirect to direct selection in *Tribolium castaneum*. 10161
- The role of sexuality in dosage compensation in *Drosophila*. 10162
- Biochemical genetics of insecticide resistance in the housefly. 10163
- INSECT HISTOLOGY**
- Spermatocyte granules in *Drosophila melanogaster*. 10003
- Microscopical studies on the development of *Babesia ovis* in *Rhipicephalus bursa* (Ixodoidea). I. Development in female ticks after repletion. 10013
- Histological, behavioral, and symptomatic effects of Pentac on *Tetranychus urticae*. 10018
- Damage to testes and recovery of fertility in boll weevils fed chemosterilants. 10100
- INSECT HORMONES**
- Effects of exogenous moulting hormones on puparium formation in *Calliphora*. 10130

## INSECT IDENTIFICATION

### INSECT IDENTIFICATION

- Gall-inhabiting *Liothrips* Uzel from India. 9867
- A new *Polymixis* HB. of Spain. *Polymixis lajonquierei* Brsn. (Supplemental description (1)) contribution to the study of Noctuidae trifinae 159(2). 9875
- Oriental species of *Coesula* Cameron (Hymenoptera: Ichneumonidae). 9897
- A revision of the pseudomorphaeridini (Orthoptera: Acridoidea: Pyrgomorphidae). 9909
- New Mymaridae from Central Africa. (Hymenoptera: Chalcidoidea). 9916
- Hypocypus nitidus* Palm. (Col., Staphylinidae) in the Joy collection. 9954
- Quedius* (*Microsaurus*) *scitus* (Grav.) (Col., Staphylinidae) a teratological specimen. 9955
- On two new species of Terebrantian Thysanoptera with remarks on a new genus *Pellothrips*. 9958
- A new *Caradrina* O. of Spain- Contributions to the study Noctuidae Trifinae, 158(1). 9977
- Recent records of migrant Lepidoptera in Taranaki. 10008
- Beetle. 10137
- Wharf borer. 10385

### INSECT METABOLISM

- Sexual dimorphism in neutral lipid metabolism in the Indian-meal moth, *Plodia interpunctella* (Hubner). 10143
- The in vitro metabolism of organophosphorus insecticides by tissue homogenates from mammal and insect. 10426

### INSECT MIGRATION

- Recent records of migrant Lepidoptera in Taranaki. 10008
- Studies and suggestions on the behaviour of moths at light. 10033
- Meteorological aspects of insect migrations. 10037
- Migrating butterflies in 1967 (Twentieth Annual Report). 10056

### INSECT MORPHOLOGY

- New species of *Chrysobothris* from the Pacific Northwest (Coleoptera: Buprestidae). 9870
- A new species of *Ficalbia* (Ravenalites) from Cambodia (Diptera: Culicidae). 9910
- Ochromolopis icetella* Hb. (Lepidoptera, Epermeniidae) in Finland, probably transported by windstorm. 9912
- Amphipyra pyramidea* L. and *A. berbera* Rungs in Finland (Lepidoptera, Noctuidae). 9913
- Description of the male, pupa, and larval habitat of *Nilobezzia brevicornis* (Diptera: Ceratopogonidae). 9963
- Elm spanworm eye size depends upon sex and diet. 10000
- Morphology and biology of a nest-producing mite, *Bakericheyla chanayi* (Acarina: Cheyletidae). 10015

- A study of a pocket of scattered desert locust population in Rajasthan, India during 1966 with special reference to eye-stripes and biometrics. 10027
- Temperature effects on embryonic development in insects. 10035
- The ultrastructure of the brain of the insect *Notonecta glauca* L. 10042
- A more recent sensillary type on the antenna of female mosquitoes (*Aedes aegypti* L.). 10055
- Morphology of the nervous system of adult *Prodenia litura*. 10064
- Eyes of the female two-spotted spider mite, *Tetranychus urticae*. i. Morphology. 10067
- New record of *Chanliops fallax* Scott. (Hemiptera: Lygacidae) on moong and urid (*Phaseolus* spp.). 10097
- The defensive behaviour of the stick insect *Oncotophasma martini* (Griffini) (Orthoptera: Phasmatidae). 10103
- Notes on the male germ cells of a beetle, *Lepidotarsa decemlineata*. 10115
- Etology as the determining factor of the numerical distribution of the species in the fauna. 10144
- A new species of *Aedes* (*Stegomyia*) from Thailand (Diptera: Culicidae). 10164
- Easy-to-kill pests of fruit trees...codling moth. 10253

### INSECT MUTATION

- Ethyl methanesulfonate (EMS) induced mutations in *Drosophila melanogaster*. 10147

### INSECT NAMES

- The family Leptogastridae (Diptera). 9927
- Spiracles of adult Scarabaeoidea (Coleoptera) and their phylogenetic significance. I. The abdominal spiracles. 9934

### INSECT NESTS

- A new family Turanoniscidae fam. n. (Isopoda, Oniscoidea) from termitaria of Middle Asia. 9874
- Observations on the life history and bionomics of *Oligotoma ceylonica ceylonica* Enderlein (Oligotomidae, Embioptera), commensal in the nest of the social spider *Stegodyphus sarasinorum* Karsch. 9978
- Morphology and biology of a nest-producing mite, *Bakericheyla chanayi* (Acarina: Cheyletidae). 10015
- Foraging galleries of the Formosan subterranean termite, *Coptotermes formosanus*, in Louisiana. 10052

### INSECT NUTRITION

- Studies on brood rearing activity of Indian honey bee *Apis indica* F. under Delhi conditions. 9974
- Rearing of the maize stem borer, *Chilo zonellus* Swinhoe on artificial diet. 9988
- Elm spanworm eye size depends upon sex and diet. 10000
- In vitro colonization of the goat biting louse, *Bovicola crassipes* and *B. limbata*. 10034
- Myxomycetes as food for other organisms. 10038
- Biology of the billbug *Sphenophorus venatus* confluent, a new pest of orchardgrass. 10047

- The ecology of the Simuliidae in a Scottish river. 10062
- Entomocoenological and biological studies in *Rosa damascena* Mill. plantations. II. Coleoptera. 10081
- Nutrition of *Xyleborus ferrugineus*. I. Ethanol in diets as a tunneling (feeding) stimulant. 10082
- Effect of different food plants on the larval and post-larval development on *Diaeris obliqua* Walker. 10084
- Sterol and water-soluble requirements for larvae of the red-banded leaf roller, *Argyrotaenia velutinana*. 10104
- On the oviposition behaviour and development of *Sitophilus oryzae* Linn. in various natural foods. 10127
- On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants. 10149

### INSECT OUTBREAKS

- Colonization of an island by the buffalo fly, *Haematobia exigua*. 10004
- A new pyralid leaf roller, *Phostria* sp. on sugarcane. 10046
- New record of *Chanliops fallax* Scott. (Hemiptera: Lygacidae) on moong and urid (*Phaseolus* spp.). 10097

- Flea beetles *Phyllotreta cruciferae* Goetz. (Coleoptera, Chrysomelidae) a new pest of stock flower *Mathiola* sp. in Rajasthan. 10110
- The stem borer *Sesamia botanophaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243

### INSECT PESTS

- Helicopter sprayers may rescue infested forests. 9959
- Biology of the billbug *Sphenophorus venatus* confluent, a new pest of orchardgrass. 10047
- Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131
- List of publications on fungus and insect defects in forest products. 10182
- Growers join forces to battle the boll weevil. 10233
- The stem borer *Sesamia botanophaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243
- Easy-to-kill pests of fruit trees...codling moth. 10253
- Needle miner infestations in lodgepole pine east of the Sierra crest. 10267
- Preliminary studies on the integrated control of the pest complex on cowpea, *Vigna unguiculata* Walp., in Nigeria. 10268
- Odorous house ant feeds on photographic film. 10386
- Observations on prolonged grain storage with forced aeration in Israel. 10389
- Biological studies in Ghana in the control of *Cadra cautella* (Wlk.), the tropical warehouse moth. 10391



INSECT PHYSIOLOGY

- Intracellular activity in cricket neurons during the generation of behaviour patterns. 9968
- Sindbis virus multiplication and *Calliphora erythrocephala* (Meig.) metamorphosis. 9969
- Notes on the biology of *Diatraea strigalis* Townsend, tachinid parasite of *Proceras sacchariphagus* Boj. 9970
- An integrated technique to study the effects of fumigants on respiration of insects. 9972
- Studies on brood rearing activity of Indian honey bee *Apis indica* F. under Delhi conditions. 9974
- Effect of temperature on the development of mustard sawfly, *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 9976
- Locust wind receptors. I. Transducer mechanics and sensory response. 9981
- Locust wind receptors. III. Contribution to flight initiation and lift control. 9982
- Locust wind receptors. ii. Interneurons in the cervical connective. 9983
- The external morphogenesis of grasshopper embryos. 9987
- Biochemical study of *Plodia interpunctella* (Hhn.) (Lepidoptera) I--Variations of body weight, water content, and dry matter content. 9993
- The influence of the rearing temperature on larval and pupal mortality and the duration of development of *Drosophila*. 9995
- Effect of temperature on water absorption, development, and hatching in eggs of the prairie grain wireworm, *Ctenicera destructor*. 9999
- Deviate-ontogenies in the aphelinid male (Hymenoptera) associated with the ovipositional behavior of the parental female. 10006
- Physico-organic chemical approach to the mode of action of organophosphorus insecticides. 10014
- The behavior of newly emerged holl weevils. 10016
- Spermatophores of the Blattaria. 10024
- Development of *Chrotogonus trachypterus* (Blanch.) (Orthoptera: Pyrgomorphidae) in relation to different levels of temperature and humidity. 10026
- The influence of temperature on reproduction and development in four species of *Glossina* (Diptera: Muscidae). 10028
- Laboratory demonstration of a chemical sex attractant in *Costelytra zealandica* (White) (Scarabaeidae: Coleoptera). 10030
- Temperature effects on embryonic development in insects. 10035
- Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides. 10043
- Experimental studies on diapause in stoneflies. III. Eggs of *Brachyptera risi* (Morton). 10051
- Water vapor sorption and humidity relationships in *Liposeclis* (Insecta: Psocoptera). 10053
- Radiation sensitivity of twelve species of arthropods. 10069

- Starvation-induced activity in cockroach malpighian tubules. 10073
- Water uptake and embryonic development in eggs of *Chorthippus brunneus* Thunberg (Saltatoria: Acrididae). 10079
- Effect of different food plants on the larval and post-larval development on *Diacrisia obliqua* Walker. 10084
- The artificial feeding of phosphamidon to *Myzus persicae*: ii. The effects of phosphamidon on liquid uptake through a parafilm membrane. 10086
- Common inhibitory motoneurons in insects. 10089
- Oenocytes: form and function. 10093
- Studies on phosphohexoseisomerase (d-glucose-6-phosphate ketol isomerase) from the Indian honeybee, *Apis indica* Fabricius. 10098
- Comparison of effects of irradiation on the primary spermatogonia and mature sperm of three species of Diptera. 10102
- Anatomical indicators for assessing age of mosquitoes: changes in ovarian follicles. 10107
- KCl-induced spreading depression and ventilation in the cockroach. 10108
- Retention of intra-cellular potassium by the housefly. 10113
- Oviposition and hatching in two species of ticks in relation to moisture deficit. 10119
- The effects of the removal of the parasite *Xenos* (insecta Strepsiptera) on the protocerebral neurosecretion of its host *Polistes* (Hym. Vespidae). 10121
- Inhibition of the defense reaction of *Drosophila melanogaster* parasitized simultaneously by the wasps *Pseudeucoila bochei* and *Pseudeucoila mellipes*. 10122
- Seasonal evolution of the honey bee thermogenesis. Oxygen consumption of the isolated bee at five different temperatures in summer and in winter. 10123
- On the oviposition behaviour and development of *Sitophilus oryzae* Linn. in various natural foods. 10127
- Experiments on larval diapause in the carabid *Pterostichus vulgaris* L. 10129
- Effects of exogenous moulting hormones on puparium formation in *Calliphora*. 10130
- Spectral efficiency as function of latency in the visual mechanism of insect (*Tenebrio molitor* L.). 10142
- Sexual dimorphism in neutral lipid metabolism in the Indian-meal moth, *Plodia interpunctella* (Huhner). 10143
- A new species of *Aedes* (*Stegomyia*) from Thailand (Diptera: Culicidae). 10164
- Growers join forces to battle the holl weevil. 10233
- The stem borer *Sesamia hotanephaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243
- Needle miner infestations in lodgepole pine east of the Sierra crest. 10267

INSECT POLLINATORS  
Bees as pests.

10244

INSECT POPULATIONS

- Homologous lines of chromosome polymorphism in the natural populations of Adirondack black fly (Diptera, Simuliidae). 10150
- Needle miner infestations in lodgepole pine east of the Sierra crest. 10267
- INSECT PROTECTIVE DEVICES
- The defensive behaviour of the stick insect *Oncotophasma martini* (Griffini) (Orthoptera: Phasmatidae). 10103
- On the explosion chemistry of the bombardier beetle. Vi. On the chemistry of the smallest bombardier beetle *Pausus faviieri*. XLIII. Communication on arthropod protective substances. 10111
- Inhibition of the defense reaction of *Drosophila melanogaster* parasitized simultaneously by the wasps *Pseudeucoila bochei* and *Pseudeucoila mellipes*. 10122
- Refined defensive mechanisms in *Chrysomela scripta*. 10139

INSECT REARING

- Studies on brood rearing activity of Indian honey bee *Apis indica* F. under Delhi conditions. 9974
- Rearing of the maize stem borer, *Chilo zonellus* Swinhoe on artificial diet. 9988
- The influence of the rearing temperature on larval and pupal mortality and the duration of development of *Drosophila*. 9995
- In vitro colonization of the goat biting lice, *Bovicola crassipes* and *B. limbata*. 10034
- Laboratory studies of *Eucelatoria armigera*, a tachinid parasite of *Heliothis* spp. 10040
- Biology of *Apanteles chilonis* and *A. flavipes* (Hymenoptera: Braconidae), parasites of *Chilo suppressalis*. 10045
- Substrate preferences and invasion behaviour exhibited by larvae of *Nilodorum brevivacca* Freeman (Chironomidae) under experimental conditions. 10066
- The predatory and reproductive behaviour of *Rhinocoris bicolor* and *R. tropicus* (Hemiptera: Reduviidae). 10085
- Inheritance of DDT-RESISTANCE in *Musca domestica* nebuld Fabr. 10096
- Selection for lindane resistance in *Dermestes maculatus* de Geer (Coleoptera, Dermestidae). 10114
- New approaches to the control of pest organisms. 10118
- Continuous laboratory culture of the locust borer, *Megacyllene robiniae*. 10141
- Experimental evidence for factors affecting the relative efficiency of indirect to direct selection in *Triholium castaneum*. 10161

INSECT REARING EQUIPMENT

- A simple apparatus for dipping treatment of insects for varying periods of time. 10116

INSECT REPELLENTS

- Method for repelling bees. patent 3,456,056. 10099

INSECT RESPIRATION

- An integrated technique to study the effects of fumigants on respiration of insects. 9972

## INSECT TAXONOMY

### INSECT TAXONOMY

- New species of crane flies from tropical America. V. (Diptera: Tipulidae). 9865
- New or little-known species of exotic Tipulidae (Diptera). XVI. 9866
- Gall-inhabiting Liothrips Uzel from India. 9867
- A new sub-genus and species of the Eumeninae (Hymenoptera, Diptera) from the Bulgarian fauna. 9868
- A new genus of Noteridae (Coleoptera: Noteridae, Noterini). 9869
- New species of Chrysobothris from the Pacific Northwest (Coleoptera: Buprestidae). 9870
- Chloropidae (Diptera), unknown in the fauna of Bulgaria. 9871
- The larvae of Odonata in the vascular territory of stagnant waters in Bulgaria. 9872
- A new family Turanoniscidae fam. n. (Isopoda, Oniscoidea) from termitaria of Middle Asia. 9874
- A new Polymixis HB. of Spain. Polymixis lajonquierei Brsn. (Supplemental description (1)) contribution to the study of Noctuidae trifinae 159(2). 9875
- The identification and distribution of Quadraspidiotus species (Homoptera: Diaspididae) on pome and stone fruits in Australia. 9876
- Cercyonis pegala abbotti, new subspecies (Lepid., Satyridae). 9877
- Revision of the Nearctic moth genus Abagrotis Smith with descriptions of new species (Lepidoptera: Noctuidae). Part VI The duanca and placida groups; checklist of the presently known species within the genus. 9879
- Study of the world Gyponinae (Homoptera: Cicadellidae). A synopsis of the genus Clinonaria. 9883
- Two new Palearctic Lithocolletis species. (Preliminary description). 9884
- Description of Dendrocercus (tmacrostigma) noumeae sp. nov. from New Caledonia (Ceraphronoidea, Megaspilidae). 9885
- A new species of Ephydrella Tonnoir and Malloch (Diptera: Ephydriidae). 9887
- New Simuliidae (Diptera) from New Caledonia and Norfolk Island. 9888
- Characters for identification of some common plusiine caterpillars of the southeastern United States. 9889
- Contribution to the knowledge of the Staphylinidae. CI. Diverse remarks on some Quedius from the eastern Mediterranean. 9890
- Allomorphus franzi, n. gen., n. spec. (Coleoptera, Curculionidae), a new species and genus from Austria. 8. Contribution to the knowledge of the Palearctic Cossoninae. 9891
- Contribution to the knowledge of the Coccidae from Brazil (Homoptera-Coccidae). 9892
- Scymnus (Sidis) hiecki Fursch, as a foe of Pseudococcus citri Risso. 9893
- Results of an Austrian Lepidoptera collecting trip to Syria and Lebanon. (Part V.: Epermeniidae). 9894
- Thomisus onustus Walck. (Arachnida) recorded in error from Thursley Common Surrey. 9895
- Cnemacantha illota (Loew) (Dipt., Lauxaniidae) recorded in error from Stanmore Common, Middx. 9896
- Oriental species of Coesula Cameron (Hymenoptera: Ichneumonidae). 9897
- A new Drosophila species from northern Fennoscandia (Diptera). 9898
- The occurrence of Danis hymetus taygetus (Felder) at Bayview, New South Wales. 9899
- A key to the species of Carcinops Marscul (Coleoptera, Histeridae) associated with stored products, including C. troglodytes (Paykull) new to this habitat. 9901
- Three new species of genus Blaptica, Stal, 1874 (Dictyoptera, Blaberidae of the Republic of Argentina). 9903
- Synonymy of Keiferia glochinella (Zeller) and related names (Lepidoptera: Gelechiidae). 9905
- A new species of Trichacoides from India with a redescription of T. scutellaris Dodd (Hymenoptera: Platygasteridae). 9906
- Palearctic species from the genus Phymata latreille, 1802 (Hem. Het. Reduviidae). 9907
- The subgenus Persicargas (Ixodoidea, Argasidae, Argas). 7. A. (P.) walkerae, new species, a parasite of domestic fowl in southern Africa. 9908
- A revision of the pseudomorphacridini (Orthoptera: Acridoidea: Pyrgomorphidae). 9909
- A new species of Ficalbia (Ravenalites) from Cambodia (Diptera: Culicidae). 9910
- A new species of Mesidia (Hymenoptera: Aphelinidae) from California. 9914
- On Sergentomyia ruttledgei (Lewis Kirk) and S. schwetzi (Adler, Theodor Parrot) (Diptera: Psychodidae). 9915
- New Mymaridae from Central Africa. (Hymenoptera: Chalcidoidea). 9916
- A new species of Epidermoptes from a South Dakota pheasant (Acarina: Epidermoptidae). 9917
- A new species of Chrysomela (Coleoptera, Chrysomelidae)-an important component of the Taimyr Peninsula biocoenoses. 9918
- The genus Heteroconis Enderlein, 1905 (Neuroptera, Coniopterygidae). 9919
- A new Danaus species from Central-Celebes. 9923
- The structure of polymorphic species of the subgenus Autolethrus (Coleoptera, Scarabaeidae) from South Kazakhstan. 9924
- Correction to the key of the European Gyrinus species. 9925
- New mimarids of Argentina (Hymenoptera; mymaridae). 9926
- The family Leptogastridae (Diptera). 9927
- Bulgarian grasshoppers (Homoptera: Auchenorrhyncha). 9928
- Three new species of Heteromenopon (Mallophaga: Menoponidae) from Brazilian and Australian parrots. 9930
- A new north Palearctic Stenus: St. (Nestus) coriaceus n. sp. (Coleoptera, Staphylinidae) (58. Contribution to the knowledge of the stenids). 9931
- A new genus and key to the species of Australian Stilbotrygidae (Neuroptera). 9933
- Spiracles of adult Scarabaeoidea (Coleoptera) and their phylogenetic significance. I. The abdominal spiracles. 9934
- Neotropical cockroaches of the Epilampra abdomennigrum complex; a clarification of their systematics (Dictyoptera, Blattaria). 9935
- New species and records of Nasutitermitinae (Isoptera: Termitidae) from Africa. 9936
- Lymantriidae--east versus west Africa. 9938
- Limacodidae- east versus west Africa. 9939
- New species of beetle mites of the family Chamobatidae (Oribatei) from the USSR. 9940
- Siphonaptera from Inari, Finland. 9942
- Aphid fauna of Macedonia. 9943
- A new Malayan species of the ant genus Epitritus and a related new genus from Singapore (Hymenoptera: Formicidae). 9944
- Philonthus parvus Sharp (Col., Staphylinidae) in Britain. 9945
- New Bulgarian fauna of phytophagous wasps (Symphyta, Hymenoptera). 9946
- A new name for the genus Cyrtolabus van der Vecht (Hymenoptera, Eumenidae). 9947
- Adelphocoris minor nov. spec. (Heteroptera, Miridae). 9949
- Additions to the genus Alloconotus Fieber, 1878 (Heteroptera, Miridae). 9950
- New Orthotylus and Pachylops species (Heteroptera, Miridae). 9951
- Several Globiceps-species (Heteroptera, Miridae). 9952
- Keys to genera and some species of New Zealand Lathridiidae (Coleoptera). 9953
- Description of immature stages of Coreidae. 3. Archimerus alternus. 9956
- Description of immature stages of Coreidae. 1. Euthochtha galeator. 9957
- On two new species of Terebrantian Thysanoptera with remarks on a new genus Pellothrips. 9958
- A new Caradrina O. of Spain- Contributions to the study Noctuidae Trifinae, 158(1). 9977
- Entomocoenological and biological studies in Rosa damascena Mill. plantations. II. Coleoptera. 10081
- A new species of Aedes (Stegomyia) from Thailand (Diptera: Culicidae). 10164



# INSECT TRAPS

The life histories and drifting of the Plecoptera and Ephemeroptera in a dartmoor stream.

10001

Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures.

10032

Marking and recapture of California red scale for field studies.

10101

Easy-to-kill pests of fruit trees...codling moth.

10253

# INSECT VECTORS

Microscopical studies on the development of *Bahesia ovis* in *Rhipicephalus bursa* (Ixodoidea). I. Development in female ticks after repletion.

10013

A new species of *Aedes* (*Stegomyia*) from Thailand (Diptera: Culicidae).

10164

Research on the synantropic flies in the Sofia area, in regard to their epidemiological importance.

10165

Local lesion host for grassy shoot virus of sugarcane.

10224

Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots.

10234

Comparative efficiency of transmission of aster yellows by *Elymana virescens* and *Macrosteles fascifrons* and the relative concentration of the causal agent in the vectors.

10238

Efficiency of three colonies of melon aphids as transmitters of Tristeza virus.

10258

# INSECTICIDE APPLICATION

Growers join forces to battle the boll weevil.

10233

# INSECTICIDE DECOMPOSITION

Degradation and anticholinesterase activity of disulfoton and phorate after 60Co gamma irradiation.

10465

# INSECTICIDE RESIDUES

Estimation and dissipation of parathion residue from the crop of Indian rape seed.

10048

Consequences of insecticide use of nontarget organisms.

10402

GLC determination of residues of disulfoton, oxydemetonmethyl, and their metabolites in tobacco plants.

10404

DDT in fats on Antarctic animals.

10405

Problems with DDT in fish culture operations.

10406

Uptake of dieldrin by isolated perfused gills of rainbow trout.

10408

Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods.

10409

Industry's concern with pesticide residues.

10411

Peacock plasma, a useful cholinesterase source for inhibition residue analysis of insecticidal carbamates.

10419

Trapping of dieldrin lost from aqueous algae cultures.

10420

Chemistry of insecticides.

10463

Comparison of ten methods for the analysis of milk for residues of chlorinated pesticides.

10470

Rapid method for the extraction, cleanup, and GLC determination of toxic residues of temik.

10471

Collaborative, study of the sweep co-distillation cleanup for chlorinated pesticide residues in edible fats and oils.

10472

Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa.

10480

# INSECTICIDE RESISTANT INSECTS

Inheritance of DDT-RESISTANCE in *Musca domestica* nebuld Fabr.

10096

Selection for lindane resistance in *Dermestes maculatus* de Geer (Coleoptera, Dermestidae).

10114

Toxicity of selected acaricides to susceptible and resistant strains of *Tetranychus urticae* Koch.

10128

On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants.

10149

Biochemical genetics of insecticide resistance in the housefly.

10163

# INSECTICIDE TRIALS

Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae.

10131

# INSECTICIDES

Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides.

10043

Estimation and dissipation of parathion residue from the crop of Indian rape seed.

10048

Biological interaction between plasticizers and insecticides.

10058

The absorption of p,p'-DDE by larvae of *Aglais urticae* (Lepidoptera: Nymphalidae).

10078

Selection for lindane resistance in *Dermestes maculatus* de Geer (Coleoptera, Dermestidae).

10114

Variability in insecticide tolerance of eighteen honey-bee colonies.

10125

Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae.

10131

Beetle.

10137

Growers join forces to battle the boll weevil.

10233

A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhyzopertha dominica* (F.) in wheat.

10237

Biology and control of leopard moth on pear trees in the United Arab Republic.

10242

A review of the use of insecticides on the main agricultural crops of the world--3. Section 3: Cotton.

10245

Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug. at seedling stage.

10251

Easy-to-kill pests of fruit trees...codling moth.

10253

Toxicity of eight insecticides to the coccinellid predator *Chilomenes sexmaculata* Fabr..

10262

Chemical control of *Drosicha mangiferae* (Green), a serious pest of *Citrus* spp. in Madhya Pradesh.

10263

Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler.

10266

Control of *Brachyrhinus cribricollis* injuring ornamentals.

10269

Metabolism of organic pesticide chemicals in higher plants.

10278

Wharf borer.

10385

The control of insects in bagged grain by the injection of dichlorvos.

10387

Determination and measurement of insecticide dust particles in atmospheres adjacent to orchards.

10399

Consequences of insecticide use of nontarget organisms.

10402

Water florae as indicators of irrigation water contamination by DDT.

10403

DDT in fats on Antarctic animals.

10405

Uptake of dieldrin by isolated perfused gills of rainbow trout.

10408

Degradation and disappearance of ortho, para isomer of technical DDT in living and dead avian tissues.

10425

Effect of dichloro diphenyl trichloro-ethane (DDT) on leghemoglobin content of root nodules of *Phaseolus aureus* (green gram).

10438

Degradation of p32-bromophos by microorganisms and seedlings.

10449

Gas chromatographic determination of ethyl O,O-dimethylthiophosphoryl-1-phenyl acetate in technical grade cidial and its 50 percent liquid formulation.

10457

Gas chromatographic characteristics of chlordane. I. Effect of an aqueous environment on the heptachlor component.

10458

Thin layer densitometric determination of rotenone and deguelin.

10461

Chemistry of insecticides.

10463

Degradation and anticholinesterase activity of disulfoton and phorate after 60Co gamma irradiation.

10465

Insecticides, how to use them safely and effectively.

10466

Comparison of ten methods for the analysis of milk for residues of chlorinated pesticides.

10470

Rapid method for the extraction, cleanup, and GLC determination of toxic residues of temik.

10471

The insecticides; chemistry, mode of action, and toxicity.

10474

Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water.

10479

Evaluation of extraction and cleanup methods for analysis of DDT and DDE in green alfalfa.

10480

# INSECTS

Allergic responses to insects.

10166

# SUBJECT INDEX

## INTEGRATED CONTROL (INSECTS)

Specificity and mechanism in the action of saligenin cyclic phosphorus esters.

10424

## INTEGRATED CONTROL (INSECTS)

Integrated control of insects. A challenge for scientists.

10265

Preliminary studies on the integrated control of the pest complex on cowpea, *Vigna unguiculata* Walp., in Nigeria.

10268

## INTESTINES

Tablet dosage-form for the immunization of the intestinal tract with live virus preparations. Patent 3,458,621.

10359

On the environment of *Polymorphus minutus* (Acanthocephala) in ducks.

10373

*Ancylostoma caninum*: Fine structure of intestinal epithelium.

10377

## IOXYNIL

The response of fumitory to various herbicides.

10293

## IPC

Selective grass control with siduron.

10294

## IRRIGATION

Water flora as indicators of irrigation water contamination by DDT.

10403

## ISOMERASES

Studies on phosphohexose isomerase (d-glucose-6-phosphate ketol isomerase) from the Indian honeybee, *Apis indica* Fabricius.

10098

## ISOMERS

Degradation and disappearance of ortho, para isomer of technical DDT in living and dead avian tissues.

10425

Reaction of aflatoxin B1 with acetic acid-thionyl chloride.

10481

## ISOPHRICHTIS SIMILIELLA

Synonymy of *Keiferia glochinella* (Zeller) and related names (Lepidoptera: Gelechiidae).

9905

## ISOPODA

A new family Turanoniscidae fam. n. (Isopoda, Oniscoidea) from termitaria of Middle Asia.

9874

## ISOPROPYL N-(3-CHLOROPHENYL)CARBAMATE

Release rates and herbicidal activity of slow release granular formulations. (abstract).

10459

## IXODES

*Ixodes pacificus* Cooley and Kohls, 1943: Its life-history and occurrence.

9962

## KEIFERIA GLOCHINELLA

Synonymy of *Keiferia glochinella* (Zeller) and related names (Lepidoptera: Gelechiidae).

9905

## KEIFERIA INCONSPICUELLA

Synonymy of *Keiferia glochinella* (Zeller) and related names (Lepidoptera: Gelechiidae).

9905

## KERATINIZATION

Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine.

10339

## KIDNEY BEANS

Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts.

10204

## KIDNEYS

Action of honey bee venom on development of epithelial cellular cultures of monkey's kidneys.

9997

## KINASES

Pyruvate kinase and phosphoenolpyruvate carboxylase activities of *Ascaris* muscle, *Hymenolepis diminuta* and *Schistosoma mansoni*.

10369

## LACCIFERIDAE

A supplementary list of the host-plants of lac insects.

10135

## LACTATE DEHYDROGENASE

Lactic dehydrogenase isozymes in the grasshopper.

9961

## LAMENESS

Foot lameness in pigs.

10332

## LARVAE

The larvae of Odonata in the vascular territory of stagnant waters in Bulgaria.

9872

Characters for identification of some common plusine caterpillars of the southeastern United States.

9889

Caddis larvae.

9904

Description of the male, pupa, and larval habitat of *Nilobezzia brevicornis* (Diptera: Ceratopogonidae).

9963

Biochemical study of *Plodia interpunctella* (Hbn.) (Lepidoptera) I--Variations of body weight, water content, and dry matter content.

9993

Variations in free amino acids in the larvae and pupae of *Chilo zonellus*.

9994

The influence of the rearing temperature on larval and pupal mortality and the duration of development of *Drosophila*.

9995

Studies on the ecology of larval Tipulinae (Diptera, Tipulidae).

10011

Lethargy, a new virus of *Melolontha melolontha* L. larvae (Coleoptera, Scarabaeidae).

10036

Biology of the billbug *Sphenophorus venatus* confluens, a new pest of orchardgrass.

10047

Substrate preferences and invasion behaviour exhibited by larvae of *Nilodorum brevicornis* Freeman (Chironomidae) under experimental conditions.

10066

The absorption of p,p'-DDE by larvae of *Aglais urticae* (Lepidoptera: Nymphalidae).

10078

Biology and description of immature stages of *Orthacheta hirtipes*, a predator of *Cordilura* spp.

10080

Effect of different food plants on the larval and post-larval development on *Diacrisia obliqua* Walker.

10084

Sterol and water-soluble requirements for larvae of the red-banded leaf roller, *Argyrotaenia velutinana*.

10104

Experiments on larval diapause in the carabid *Pterostichus vulgaris* L.

10129

Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae.

10131

The histopathology of a nuclear polyhedrosis in larvae of the cabbage looper, *Trichoplusia ni*, related to symptoms and mortality.

10134

Refined defensive mechanisms in *Chrysomela scripta*.

10139

A new species of *Aedes* (Stegomyia) from Thailand (Diptera: Culicidae).

10164

Distribution of larval and pupal instars of *Plusia argentifera* Guen. on tobacco plants.

10240

*Pneumotrungylus tenuis* in moose on a deer-free island.

10375

The course of naturally acquired helminth infections of horses given regular anthelmintic treatment.

10380

## LASPEYRESIA POMONELLA

Easy-to-kill pests of fruit trees...codling moth.

10253

## LATEX

Recent techniques for serodiagnosis of hydatidosis. V. The importance of tests of bentonite, latex and indirect hemagglutination in the field sanitation of hidatidosis.

10372

## LATHRIDIIDAE

*Lathridius bifasciatus* Reitt. (Col., Lathridiidae) habitats.

9878

Keys to genera and some species of New Zealand Lathridiidae (Coleoptera).

9953

## LAUXANIIDAE

*Cnema cantha illota* (Loew) (Dipt., Lauxaniidae) Cnema in error from Stanmore Common, Middx.

9896

## LEAF MINERS

Alternative host plants of tobacco leaf-miner (*Phthorimaea operculella* (Zell.)).

10239

## LEAF RUST

The epiphytotic of yellow orange leaf disease of rice in 1966 in Thailand.

10197

## LEAF SPOT

A leaf spot disease of *Cyamopsis tetragonoloba* caused by *Curvularia lunata* in India.

10177

Post-infection changes in the sugar content of leaf-spot infected barley.

10178

Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants.

10223

## LEAVES

Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts.

10204

Spray droplet size in the control of spruce budworm, holl weevil, bollworm and cabbage looper.

10247

Cell physiology investigations of the action of new triazine derivatives on petiole epidermis of *Solanum tuberosum* L.

10431

## LEGISLATION

Hog cholera and other communicable swine diseases. Miscellaneous amendments.

10328

## LEGUMES

Bloat on *Dolichos lablab*.

10335

## LEPIDOPTERA

Butterflies of Collobrières, var. Alpes Maures, Provence in July and August 1967.

9880

A change in the Lepidoptera of Hampstead after four decades.

9881

The butterflies of Lord Howe Island.

9929

Some new records of butterflies from Nepal.

9948

Recent records of migrant Lepidoptera in Taranaki.

10008



- Migrating butterflies in 1967 (Twentieth Annual Report). 10056
- Preliminary studies on the integrated control of the pest complex on cowpea, *Vigna unguiculata* Walp., in Nigeria. 10268
- LEPTINOTARSA DECEMLINEATA**  
Notes on the male germ cells of a beetle, *Leptinotarsa decemlineata*. 10115
- The effect of *Perillus bioculatus* (Fabr.) (Het., Pentatomidae) on the population dynamics of the potato beetle. 10124
- LEPTOCORIS VARICORNIS**  
On the odour components of the stink of two heteropteran bugs of India. 9989
- LEPTOGASTER**  
The family Leptogastridae (Diptera). 9927
- LEPTOSPIRA HARDJO**  
The isolation of a strain of *Leptosira*, serotype hardjo, from cattle in Queensland. 10358
- LESPEDEZA CUNEATA**  
Structure, stability, and energy flow in plants and arthropods in a sericea Lespedeza stand. 10255
- LETHAL FACTOR**  
Position effect on DNA transcription and replication. 10160
- LEUCINE**  
Operator constitutive mutations in the leucine operon of *Salmonella typhimurium*. 10329
- LEUCOPHAEA MADERAE**  
Female specific protein: Biosynthesis controlled by corpus allatum in *Leucophaea maderae*. 10002
- LIFE CYCLE**  
*Ixodes pacificus* Cooley and Kohls, 1943: Its life-history and occurrence. 9962
- Life history and damage of the pine root tip weevil, *Hylolius rhizophagus*, in Wisconsin. 10049
- LIGHT**  
Studies and suggestions on the behaviour of moths at light. 10033
- Experiments on larval diapause in the carabid *Pterostichus vulgaris* L. 10129
- Spectral efficiency as function of latency in the visual mechanism of insect (*Tenebrio molitor* L.). 10142
- Influence of light on sporulation by *Helminthosporium stenospilum*. 10183
- Biochemical basis for plant competition. 10274
- Seed dormancy and germination in ecotypes of johnsongrass. 10309
- Competition between flax and wild buckwheat. 10440
- Photocontrol of rough cinquefoil seed germination and its enhancement by temperature manipulation and KNO<sub>3</sub>. 10451
- LIGHT TRAPS**  
A killing agent for use in light traps. 10090
- LIMACODIDAE**  
*Limacodidae*-east versus west Africa. 9939
- LINDANE**  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032
- Selection for lindane resistance in *Dermestes maculatus* de Geer (Coleoptera, Dermestidae). 10114
- Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae. 10131
- On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants. 10149
- Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug. at seedling stage. 10251
- Preliminary studies on the integrated control of the pest complex on cowpea, *Vigna unguiculata* Walp., in Nigeria. 10268
- Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395
- Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479
- LINURON**  
Basis for selectivity of linuron on carrot and common ragweed. 10295
- Release rates and herbicidal activity of slow release granular formulations. (abstract). 10459
- LIPIDS**  
The neutral lipids from various organs of the termite *Macrotermes goliath*. 9991
- Sexual dimorphism in neutral lipid metabolism in the Indian-meal moth, *Plodia interpunctella* (Hubner). 10143
- Studies on lipid metabolism of *Ascaris* during starvation. 10368
- LIPOSCCELIDAE**  
Water vapor sorption and humidity relationships in *Liposcels* (Insecta: Psocoptera). 10053
- LITERATURE**  
Biochemical basis for plant competition. 10274
- Plant growth regulators. 10436
- LIVER**  
Schistosomal cirrhosis in pigs in Jabalpur, M. P.. 10381
- LIVESTOCK**  
Metabolism of strychnine nitrate applied for the control of the bear. 10318
- Rabies diagnosis. Observations on strains of virus with low pathogenicity. 10349
- LIVESTOCK DISEASES**  
Incidence of bluetongue reported calendar year 1967. 10325
- Hog cholera and other communicable swine diseases. Miscellaneous amendments. 10328
- Vaccinated cattle.....can harbor foot and mouth disease. 10331
- Foot lameness in pigs. 10332
- Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine. 10339
- Rubber-vine (*Cryptostegia grandiflora*) toxicity for ruminants. 10346
- LOCUSTA MIGRATORIA**  
Common inhibitory motoneurons in insects. 10089
- LOGS**  
Seasonal changes in the distribution of the millipede *Cylindroiulus punctatus* (Leach) in decaying logs and soil. 9966
- LONCHOCARPUS**  
Thin layer densitometric determination of rotenone and deguelin. 10461
- LONGEVITY**  
Studies on an Israel strain of *Anagrus pseudocoei* (Girault) (Hym., Encyrtidae). II. Some biological aspects. 9964
- The influence of ecological and genetic factors on the birth and death of *Macrocheles robustulus* (Berlese, 1904). 10005
- Lethal temperatures for puparia of *Glossina morsitans orientalis*. 10092
- Survival of lyophilized *Bacillus popilliae* in soil. 10415
- LOOSE SMUT**  
Control of barley loose smut in Wisconsin in 1966 and 1967. 10171
- Chemical control of loose smut in barley in Minnesota. 10174
- Chemotherapy of loose smut of barley in Canada. 10179
- A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum. 10189
- Effect of chemical treatments on the control of. 10191
- Control of loose smut of wheat and barley in Arkansas with fungicides. 10192
- Chemical control of wheat and barley loose smut. 10194
- Effect of two systemic fungicides on control of loose smut in wheat. 10195
- Effectiveness of fungicides in controlling barley loose smut. 10196
- Chemical control of loose smut in barley. 10214
- The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl,4-oxathiin. 10222
- LUCANIDAE**  
Spiracles of adult Scarabaeoidea (Coleoptera) and their phylogenetic significance. I. The abdominal spiracles. 9934
- LYCAENIDAE**  
The occurrence of *Danis hymetus taygetus* (Felder) at Bayview, New South Wales. 9899
- LYGAEIDAE**  
New record of *Chanliops fallax* Scott. (Hemiptera: Lygaeidae) on moong and urid (*Phaseolus* spp.). 10097
- LYMAENON**  
New Mymaridae from Central Africa. (Hymenoptera: Chalcidoidea). 9916
- LYMANTRIIDAE**  
*Lymantriidae*-east versus west Africa. 9938
- Biology of *Agrothereutes tunethnus* Haber. (Hym., Ichneumonidae) an ectoparasite of *Orgyia dubia* Tausch. (Lep., Lymantriidae). 10054

# SUBJECT INDEX

## LYOPHILIZATION

### LYOPHILIZATION

Survival of lyophilized *Bacillus popilliae* in soil. 10415

### LYSIS

Immune lysis of rabies virus-infected cells. 10361

### MACROCHELES

The influence of ecological and genetic factors on the birth and death of *Macrocheles rohustulus* (Berlese, 1904). 10005

### MACROPHOMINA PHASEOLI

Comparison of mycelial and Sclerotial inoculum of *Macrophomina phaseoli* in the mortality of pine seedlings under varying soil conditions. 10225

### MACROSTELUS FASCIFRONS

Comparative efficiency of transmission of aster yellows by *Elymana virescens* and *Macrosteles fascifrons* and the relative concentration of the causal agent in the vectors. 10238

### MALACOSOMA PLUVIALE

Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests. 10257

### MALARIA

Medical and veterinary chemicals. Vol. I, parts I and II. 10355

### MALATHION

A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhyzopertha dominica* (F.) in wheat. 10237

Biology and control of leopard moth on pear trees in the United Arab Republic. 10242

Chemical control of *Drosicha mangiferae* (Green), a serious pest of Citrus spp. in Madhya Pradesh. 10263

Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods. 10409

### MALEIC HYDRAZIDE

The mode of action of maleic hydrazide: Inhibition of growth. 10444

Chemistry of fungicides. 10476

### MALLOPHAGA

In vitro colonization of the goat biting louse, *Bovicola crassipes* and *B. limbata*. 10034

### MALPIGHIAN TUBES

Starvation-induced activity in cockroach malpighian tubules. 10073

### MAMMALS

Mites of the super-family Gamasoidea on micromammalia in the western Balkan Range. 9911

The effect of pupal predators on a population of winter moth, *Operophtera brumata* (L.) (Hydriomenidae). 10010

Research on the effect of the entomophagous fungi *Beauveria hassiana* (bals.) Vuill. and *Metarrhizium anisopliae* (Metsch.) Sorok. on warm-blooded animals. 10353

A study of the mites of the Gamasoidea superfamily (Parasitiformes) infesting small mammals on the Vitosha Mountain. 10364

### MANGANESE CHLORIDE

Effect of manganese and cobalt on ascorbic acid metabolism in rats. 10352

## MATHEMATICAL ANALYSIS

The toxicity to *Tribolium castaneum* (Herbst) (Coleoptera, Tenebrionidae) of mixtures of pyrethrins and piperonyl butoxide: Fitting a mathematical model. 10031

The correlation between physiological activity and physicochemical property of the substituted phenols. 10437

## MATHIOLA

Flea beetles Phyllotreta cruciferae Goetz. (Coleoptera, Chrysomelidae) a new pest of stock flower *Mathiola* sp. in Rajasthan. 10110

## MATTESIA GRANDIS

Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans *Glugea gasti* and *Mattesia grandis*. 10068

## MEGACYLLENE ROBINIAE

Continuous laboratory culture of the locust borer, *Megacyllene robiniae*. 10141

## MEIOSIS

Meiosis in the grasshopper: Chiasma frequency after elevated temperature and X-rays. 10151

## MELANAGROMYZA

Biological control of *Cuscuta* spp. II. Biology and host-plant range of *Melanagromyza cuscutae* Hering (Dipt. Agromyzidae). 10272

## MELANOLOPHIA IMITATA

Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests. 10257

## MELANOPLUS

Meiosis in the grasshopper: Chiasma frequency after elevated temperature and X-rays. 10151

## MELANOPLUS DIFFERENTIALIS

Lactic dehydrogenase isozymes in the grasshopper. 9961

## MELANOPLUS SANGUINIPES

Twenty-six varieties of forage crops evaluated for resistance to feeding by *Melanoplus sanguinipes*. 10246

## MELOLONTHA MELOLONTHA

Lethargy, a new virus of *Melolontha melolontha* L. larvae (Coleoptera, Scarabaeidae). 10036

## MENOPONIDAE

Three new species of Heteromenopon (Mallophaga: Menoponidae) from Brazilian and Australian parrots. 9930

## MERCURY

Review of methods for mercury in pesticide formulations. 10469

## MERCURY CHLORIDE

Rhizoctonia leaf rot of colocasia in India. 10188

## MERCURY COMPOUNDS

Fungicidal control of rice diseases. 10170

Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223

## MESOSTIGMATA

Ear mites of the genus *Dirocheles* (Acarina: Mesostigmata) found on noctuids in Hawkes Bay. 9882

## METABOLISM

Vitamin A metabolism in protein deficiency. 10324

Effect of manganese and cobalt on ascorbic acid metabolism in rats. 10352

Studies on lipid metabolism of *Ascaris* during starvation. 10368

Arginine metabolism in *Ascaris lumbricoides*. Activity of arginine carboxylase and arginase. 10379

Biodegradation of pesticides. 10422

Biochemical studies on the terpene metabolism in sweet potato root tissue with black rot. Effect of C10- and C15-terpenols on acetate-2-14C incorporation into ipomeamarone. 10446

## METALDEHYDE

Use of metaldehyde as dusts and sprays to control the giant African snail *Achatina fulica* Bowdich. 10319

Observations on the control of *Achatina fulica* Bowdich, the giant African snail with methaldhyde. 10320

## METALS

Determination and measurement of insecticide dust particles in atmospheres adjacent to orchards. 10399

## METAMORPHOSIS

Sindbis virus multiplication and *Calliphora erythrocephala* (Meig.) metamorphosis. 9969

Pupal duration in *Glossina morsitans* orientalis under conditions of constant temperature. 10091

Experiments on larval diapause in the carabid *Pterostichus vulgaris* L. 10129

Easy-to-kill pests of fruit trees...codling moth. 10253

## METARRHIZIUM ANISOPLIAE

Research on the effect of the entomophagous fungi *Beauveria hassiana* (bals.) Vuill. and *Metarrhizium anisopliae* (Metsch.) Sorok. on warm-blooded animals. 10353

## METEPA

Mutagenic effects of TEPA and METEPA in mice. 10333

## METHODOLOGY

An integrated technique to study the effects of fumigants on respiration of insects. 9972

Quantitative determination of uric acid in insect feces by lithium carbonate extraction and the enzymatic-spectrophotometric method. 9973

Recovery of mites from peat and mineral soils using a new floatation method. 9975

Hexalure, an insect sex attractant discovered by empirical screening. 10025

Marking and recapture of California red scale for field studies. 10101

A simple apparatus for dipping treatment of insects for varying periods of time. 10116

Identification of hydrocarbons from *Novomessor cockerelli*. 10138

Continuous laboratory culture of the locust borer, *Megacyllene robiniae*. 10141

Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium* wilt with Thiazendazole and Benlate. 10181

A method for spraying individual trees. 10282



- A sprayer for application of small amounts of herbicides to flats. 10314
- Control method of inactivated vaccines against the Newcastle disease by means of the titulation of neutralizing antibodies. 10334
- Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods. 10409
- Modifications of the micromethod of sample cleanup for thin-layer and gas chromatographic separation and determination of common organic pesticide residues. 10413
- Activation and standardization of purified silica gel for column chromatographic cleanup of pesticide residue extracts. 10414
- Analysis of grains for multiple residues of organic fumigants. 10416
- Methods of determining pesticides in food products. (JPRS 34,946). 10418
- Peacock plasma, a useful cholinesterase source for inhibition residue analysis of insecticidal carhamates. 10419
- Review of methods for mercury in pesticide formulations. 10469
- Comparison of ten methods for the analysis of milk for residues of chlorinated pesticides. 10470
- Rapid method for the extraction, cleanup, and GLC determination of toxic residues of temik. 10471
- Collaborative, study of the sweep co-distillation cleanup for chlorinated pesticide residues in edible fats and oils. 10472
- Analysis of multiple pesticide residues--chemical identity and confirmation of results. 10473
- Note on versatility of silicone Dow Corning 11 substrate for gas chromatography of pesticides. 10482
- METHYL BROMIDE**  
Analysis of grains for multiple residues of organic fumigants. 10416
- METHYL PARATHION**  
Spray droplet size in the control of spruce budworm, holl weevil, bollworm and cabbage looper. 10247
- Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods. 10409
- MICE**  
Mutagenic effects of TEPA and METEPA in mice. 10333
- Rabies diagnosis. Observations on strains of virus with low pathogenicity. 10349
- Immunogenicity of concentrated and purified rabies vaccine of tissue culture origin. 10360
- Researches on Galega species regarding their content of toxins by means of biological methods. I. Toxicity of goats-rue (Galega officinalis L.) for warmblooded animals. 10428
- MICROBIOLOGICAL DEGRADATION**  
Degradation of p32-bromophos by microorganisms and seedlings. 10449

- MICROBIOLOGY**  
Antennopsis gallica Heim and Buchli (hyphomycetes: Glocohaustoriales), an entomogenous fungus on subterranean termites in Florida. 10022
- MICROCOCCACEAE**  
Delayed lethal effect of 2,4-dichlorophenoxyacetic acid on bacteria. 10429
- MICROORGANISMS**  
Verticillium wilt of tobacco. VII Pathogenicity of isolates of Verticillium dahliae Kleb. on New Zealand tobacco. 10231
- Method for combating micro-organisms. Patent 3,458,636. 10362
- Observations on the decline of water milfoil and other aquatic plants, Maryland, 1962-1967. 10393
- Biodegradation of pesticides. 10422
- MICROSCOPY**  
Microscopical studies on the development of Babesia ovis in Rhipicephalus bursa (Ixodoidea). I. Development in female ticks after repletion. 10013
- MICROSPORIDIA**  
Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans Glugea gastri and Mattesia grandis. 10068
- MILK**  
Comparison of ten methods for the analysis of milk for residues of chlorinated pesticides. 10470
- MIRIDAE**  
Adelphocoris minor nov. spec. (Heteroptera, Miridae). 9949
- Additions to the genus Alloconotus Fieber, 1878 (Heteroptera, Miridae). 9950
- New Orthotylus and Pachylops species (Heteroptera, Miridae). 9951
- Several Globiceps-species (Heteroptera, Miridae). 9952
- MITES**  
Ear mites of the genus Dicrocheles (Acarina: Mesostigmata) found on noctuids in Hawkes Bay. 9882
- New species of beetle mites of the family Chamobatidae (Oribatei) from the USSR. 9940
- Recovery of mites from peat and mineral soils using a new floatation method. 9975
- A model accounting for sympatry in water mites. 10076
- The parasitism of gamasid mites (Gamasoidea) on birds. 10145
- European red mite and two-spotted spider mite control on apples in California. 10236
- Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries. 10248
- The incidence of demodectic mites in the eyelids of various mammalian hosts. 10363
- MITOCHONDRIA**  
Ancylostoma caninum: Fine structure of intestinal epithelium. 10377
- MITOSIS**  
The mode of action of malic hydrazide: Inhibition of growth. 10444

- MODELS**  
The toxicity to Tribolium castaneum (Herbst) (Coleoptera, Tenebrionidae) of mixtures of pyrethrins and piperonyl butoxide: Fitting a mathematical model. 10031
- MOLLUSCACIDES**  
Use of metaldehyde as dusts and sprays to control the giant African snail Achatina fulica Bowdich. 10319
- Observations on the control of Achatina fulica Bowdich, the giant African snail with methldehyde. 10320
- MOLTING (INSECTS)**  
Oenocytes: form and function. 10093
- Effects of exogenous moulting hormones on puparium formation in Calliphora. 10130
- MONKEYS**  
Action of honey bee venom on development of epithelial cellular cultures of monkey's kidneys. 9997
- MONOSODIUM ACID METHANEARSONATE**  
Repeated, foliar applications of herbicides on johnsongrass. 10291
- Control of johnsongrass on drainage ditchbanks in sugarcane. 10297
- MONURON**  
African feather grass--a weed worth watching. 10279
- MOOSE**  
Pneumostongylus tenuis in moose on a deer-free island. 10375
- MORDELLIDAE**  
Mordellistena pumila group in Finland (Coleoptera, Mordellidae). 9941
- MORGANIA HISTRIO TRANSVAALENSIS**  
Biological notes on the bee Tetralonia minuta and its cleptoparasite, Morgania histrio transvaalensis (Hymenoptera: Anthophoridae). 10109
- MORPHOLOGY**  
Experimental infections with Bacillus larvae. I. A strain with a morphological marker. 10020
- Eimeria tenella schizonts and merozoites in macrophages as shown by electron microscopy. 10354
- The development of the body wall of Polymorphus minutus (Acanthocephala) in its intermediate host Gammarus pulex. 10370
- The fine structure and method of feeding of the tissue parasitizing stages of Histomonas meleagridis. 10378
- Spirurata of animals and humans and the diseases. 10382
- MORTALITY**  
The influence of the rearing temperature on larval and pupal mortality and the duration of development of Drosophila. 9995
- The influence of ecological and genetic factors on the birth and death of Macrocheles robustulus (Berlese, 1904). 10005
- The effect of pupal predators on a population of winter moth, Operophtera brumata (L.) (Hydriomenidae). 10010
- Diplogasterid nematodes (Diplogasteridae: Rhabditida) and their relationship to insect disease. 10094

# SUBJECT INDEX

## MOSAIC

Oviposition and hatching in two species of ticks in relation to moisture deficit.

10119

The histopathology of a nuclear polyhedrosis in larvae of the cabbage looper, *Trichoplusia ni*, related to symptoms and mortality.

10134

Comparison of mycelial and Sclerotial inoculum of *Macrophomina phaseoli* in the mortality of pine seedlings under varying soil conditions.

10225

Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests.

10257

## MOSAIC

Interaction between chilli mosaic and powdery mildew in tobacco.

10176

Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts.

10204

Studies on the biosynthesis of TMV. I. A system approaching a synchronized virus synthesis in a tobacco leaf.

10210

A necrotic type virus occurring on a weed in Germany.

10227

## MOSAIC (ALFALFA)

Freezing alfalfa clones from alfalfa mosaic virus by heat treatment.

10185

## MOTHS

Studies and suggestions on the behaviour of moths at light.

10033

## MOWING

Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants.

10303

## MULCHES

In your garden - weeds: Robbers, but not always bad.

10168

## MUNG BEANS

Effect of dichloro diphenyl trichloro-ethane (DDT) on leghemoglobin content of root nodules of *Phaseolus aureus* (green gram).

10438

## MURAMIDASE

Immune reaction in insects. I. Lysozyme as the fundamental antibacterial factor in the humoral preventive mechanism of the insects.

10077

## MUSCA AUTUMNALIS

Nematode parasites of the face fly and the onion maggot in France and Denmark.

10120

## MUSCA DOMESTICA

The utilization of C14-labelled adenosine diphosphate during the in vitro respiration of housefly sarcosomes.

9984

Biological interaction between plasticizers and insecticides.

10058

Inheritance of DDT-RESISTANCE in *Musca domestica* nebuld Fabr.

10096

Comparison of effects of irradiation on the primary spermatogonia and mature sperm of three species of Diptera.

10102

Retention of intra-cellular potassium by the housefly.

10113

Biochemical genetics of insecticide resistance in the housefly.

10163

## MUSCLES

Lactic dehydrogenase isozymes in the grasshopper.

9961

Common inhibitory motoneurons in insects.

10089

Pyruvate kinase and phosphoenolpyruvate carboxykinase activities of *Ascaris muscel*, *Hymenolepis diminuta* and *Schistosoma mansoni*.

10369

## MYCOSIS

Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine.

10339

On the effect of molds on various animal species. Part 2.

10343

Problems in raising ducks.

10357

## MYMARIDAE

New Mymaridae from Central Africa. (Hymenoptera: Chalcidoidea).

9916

New mimarids of Argentina (Hymenoptera; mymaridae).

9926

## MYRIOPHYLLUM

A survey of the chemical composition of Potamogeton and Myriophyllum in New Jersey.

10448

## MYRIOPHYLLUM SPICATUM

Observations on the decline of water milfoil and other aquatic plants, Maryland, 1962-1967.

10393

## MYXOMYCETES

Myxomycetes as food for other organisms.

10038

## MYZUS PERSICAE

Meteorological aspects of insect migrations.

10037

Insect parasites of the green peach aphid, *Myzus persicae* Sulz. and their control potential.

10059

The artificial feeding of phosphamidon to *Myzus persicae*: ii. The effects of phosphamidon on liquid uptake through a parafilm membrane.

10086

## NACERDES MELANURA

Wharf borer.

10385

## NALED

Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures.

10032

## NATURAL CONTROL (INSECTS)

*Meteorus versicolor* Wesm. var. *decoloratus* Ruthe (Hym., Braconidae), a new parasite of *Thaumetopoea pityocampa* Schiff. (Lep., Thaumetopoeidae).

9980

An interesting case of adaptation to various hosts on the part of an egg parasite.

9985

The Ehippigerinae (Orthoptera, Tettigoniidae) occasional but important predators of *Thaumetopoea pityocampa* Schiff.

9996

New parasite records on *Hymenia recurvalis* (Fabricius) (Lepidoptera: Pyralidae).

10087

A new record, *Dorylus labiatus* Shuck. (Hymenoptera: Formicidae) as a predator of *Microtermes mycophagus* Desn. (Isoptera: Termitidae).

10112

Contribution to the knowledge of the natural enemies of *Bissetia steniellus* (Hampson) (Lep.: Pyralidae).

10254

New record of hymenopterous parasites of *Phytomyza atricornis* (Meigen), a serious pest of pea.

10259

## NECROSIS

Studies on the infection of cucumber mosaic virus. V. the observation of epidermal cell in the local lesion.

10180

A necrotic type virus occurring on a weed in Germany.

10227

## NEMATOCIDES

Nematocides. Patent 3,457,353.

10271

The fate of phenyl N,N'-dimethylphosphor-diamidate in soil.

10401

## NEMATODE VECTORS

Translocation of tobacco ringspot virus in cucumber and zinnia.

10206

## NEMATODES

Description, biology, and importance of a new species of Allantonematidae (Nematoda), parasite of the aphidiphagous Coccinellidae: *Parasitylenchus coccinellinae*, n. sp.

10039

Nematode parasites of the face fly and the onion maggot in France and Denmark.

10120

*Pneumostromylus tenuis* in moose on a deer-free island.

10375

Spirurata of animals and humans and the diseases.

10382

## NEOTROPICAL REGION

Neotropical cockroaches of the *Epilampra abdomennigrum* complex; a clarification of their systematics (Dictyoptera, Blattaria).

9935

## NEPHOTETIX

Anatomical studies of the ovipositional site of plant hoppers and leaf hoppers on rice.

10075

Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots.

10234

## NERVES

KCl-induced spreading depression and ventilation in the cockroach.

10108

## NERVOUS SYSTEM

Intracellular activity in cricket neurons during the generation of behaviour patterns.

9968

Locust wind receptors. ii. Interneurons in the cervical connective.

9983

Morphology of the nervous system of adult *Prodenia litura*.

10064

Cockroach heart response to cardio-acceleration.

10074

Common inhibitory motoneurons in insects.

10089

## NEUROPTERA

A new genus and key to the species of Australian Stilbopterygidae (Neuroptera).

9933

## NEWCASTLE DISEASE VACCINES

Control method of inactivated vaccines against the Newcastle disease by means of the titulation of neutralizing antibodies.

10334

## NICOTIANA GLUTINOSA

On the inhibitory effect of yeast ribonucleic acid on the infection of *Nicotiana glutinosa* by tobacco mosaic virus.

10443

## NILAPARVATA LUGENS

Anatomical studies of the ovipositional site of plant hoppers and leaf hoppers on rice.

10075



# SUBJECT INDEX

- Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234
- NITRILES**  
N-(substituted-benzoyl) aminoaceto- and aminopropionitriles. Patent 3,457,294 10460
- NITROGEN**  
Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants. 10303  
Analytical studies on extracts of *Litomosoides carinii*. 10341
- NOCTUIDAE**  
A new *Polymixis* HB. of Spain. *Polymixis lajonquierei* Brsn. (Supplemental description (1)) contribution to the study of Noctuidae trifinae 159(2). 9875  
Revision of the Nearctic moth genus *Abagrotis* Smith with descriptions of new species (Lepidoptera: Noctuidae). Part VI The duanica and placida groups; checklist of the presently known species within the genus. 9879  
Ear mites of the genus *Dicrocheles* (Acarina: Mesostigmata) found on noctuids in Hawkes Bay. 9882  
A note: Some records of Australian Noctuidae in New Zealand. 9886  
A new *Caradrina* O. of Spain- Contributions to the study Noctuidae Trifinae, 158(1). 9977  
A killing agent for use in light traps. 10090  
Distribution of larval and pupal instars of *Plusia argentifera* Guen. on tobacco plants. 10240  
The stem borer *Sesamia botanophaga* Tams and Bowden (Lep., Noctuidae) and the maize crop in central Ashanti, Ghana. 10243
- NOMENCLATURE**  
A new name for the genus *Cyrtolabus* van der Vecht (Hymenoptera, Eumenidae). 9947
- NOTERIDAE**  
A new genus of Noteridae (Coleoptera: Noteridae, Noterini). 9869
- NOTODONTIDAE**  
*Meteorus versicolor* Wesm. var. *decoloratus* Ruthe (Hym., Braconidae), a new parasite of *Thaumetopoea pityocampa* Schiff. (Lep., Thaumetopoeidae). 9980
- NOTONECTA**  
The ultrastructure of the brain of the insect *Notonecta glauca* L. 10042
- NOVOMESSOR**  
Identification of hydrocarbons from *Novomessor cockerelli*. 10138
- NUCLEAR POLYHEDROSIS VIRUS**  
Leaching of the nuclear-polyhedrosis virus of *Trichoplusia ni* from soil. 10041  
Laboratory and field experiments on the effectiveness of purified and non-purified nuclear polyhedral virus of *Lymantria dispar* L.. 10061  
The histopathology of a nuclear polyhedrosis in larvae of the cabbage looper, *Trichoplusia ni*, related to symptoms and mortality. 10134
- NUCLEIC ACIDS**  
Mechanisms of action of herbicides. 10299

- NUTRITION**  
The fine structure and method of feeding of the tissue parasitizing stages of *Histomonas meleagridis*. 10378
- NYMPHALIDAE**  
The absorption of p,p'-DDE by larvae of *Aglaia urticae* (Lepidoptera: Nymphalidae). 10078
- NYMPHS**  
Description of immature stages of Coreidae. 3. *Archimerus alternus*. 9956  
Description of immature stages of Coreidae. 1. *Euthochtha galeator*. 9957
- OATS**  
A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum. 10189  
Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223  
Seed treatment trial, 1967. 10229
- ODONATA**  
The larvae of Odonata in the vascular territory of stagnant waters in Bulgaria. 9872  
Autosomal fragmentations and fusions in Odonata and their evolutionary implications. 10157
- OLETHREUTIDAE**  
Easy-to-kill pests of fruit trees...codling moth. 10253
- OLIGOTOMIDAE**  
Observations on the life history and bionomics of *Oligotoma ceylonica ceylonica* Enderlein (Oligotomidae, Embioptera), commensal in the nest of the social spider *Stegodyphus sarasinorum* Karsch. 9978
- ONIONS**  
Toxic metabolite of *Aspergillus niger* and its role in onion rot disease. 10208
- OOGENESIS**  
Female specific protein: Biosynthesis controlled by corpus allatum in *Leucophaea maderae*. 10002  
Vitellogenic blood protein synthesis by insect fat body. 10083
- OPEROPHTERA BRUMATA**  
The insect predators of the pupal stage of the winter moth, *Operophtera brumata* (L.) (Lepidoptera: Hydrimenidae). 10009  
The effect of pupal predators on a population of winter moth, *Operophtera brumata* (L.) (Hydrimenidae). 10010
- OPIUS**  
New record of hymenopterous parasites of *Phytomyza atricornis* (Meigen), a serious pest of pea. 10259
- OPIUS CONCOLOR**  
The first large-scale experimentation with the biological control of the olive fly (*Dacus oleae* Gmel.) by means of *Opius concolor* Szep. siculus Mon. in Sicily. 10256
- ORANGES**  
Efficiency of three colonies of melon aphids as transmitters of *Tristeza* virus. 10258
- ORCHARDS**  
Influence of pesticides and fertilizers on the behaviour of phytophagous mites in orchards and under laboratory conditions. 10065

# ORGANOPHOSPHORUS COMPOUNDS

- Biological control of olive scale, *Parlatoria oleae* (Collee), in a deciduous fruit orchard in California. 10252  
Determination and measurement of insecticide dust particles in atmospheres adjacent to orchards. 10399
- ORGANIC COMPOUNDS**  
Dioxane and dioxaspiro derivatives as attractants for male yellow-fever mosquitoes. 10023  
Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides. 10043  
Method for repelling bees. patent 3,456,056. 10099  
Metabolism of organic pesticide chemicals in higher plants. 10278  
Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395  
Modifications of the micromethod of sample cleanup for thin-layer and gas chromatographic separation and determination of common organic pesticide residues. 10413  
Methods of determining pesticides in food products. (JPRS 34,946). 10418
- ORGANOPHOSPHORUS COMPOUNDS**  
Physico-organic chemical approach to the mode of action of organophosphorus insecticides. 10014  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032  
Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides. 10043  
A simple starch-gel electrophoretic method to investigate esterase inhibition by common organic insecticides. 10044  
Estimation and dissipation of parathion residue from the crop of Indian rape seed. 10048  
Inheritance of DDT-RESISTANCE in *Musca domestica* nebuld Fabr. 10096  
Variability in insecticide tolerance of eighteen honey-bee colonies. 10125  
Toxicity of selected acaricides to susceptible and resistant strains of *Tetranychus urticae* Koch. 10128  
Beetle. 10137  
On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants. 10149  
Growers join forces to battle the boll weevil. 10233  
Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234  
The biology, mode of attack and damage caused by the thrips, (*Haplothrips tritici* Kurd) to wheat crops. 10235  
European red mite and two-spotted spider mite control on apples in California. 10236  
A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of

# SUBJECT INDEX

## ORIBATEI

- Sitophilus oryzae (L.) and Rhyzopertha dominica (F.) in wheat. 10237
- Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries. 10248
- Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug, at seedling stage. 10251
- Easy-to-kill pests of fruit trees...codling moth. 10253
- Toxicity of eight insecticides to the coccinellid predator *Chilomenes sexmaculata* Fabr.. 10262
- Chemical control of *Drosicha mangiferae* (Green), a serious pest of Citrus spp. in Madhya Pradesh. 10263
- Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler. 10266
- Control of *Brachyrhinus cribricollis* injuring ornamentals. 10269
- Chemical stimulation of ethylene evolution and bud growth. 10300
- The control of insects in hagged grain by the injection of dichlorvos. 10387
- Pesticides and clay minerals. 10397
- Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods. 10409
- Methods of determining pesticides in food products. (JPRS 34,946). 10418
- Specificity and mechanism in the action of saligenin cyclic phosphorus esters. 10424
- The in vitro metabolism of organophosphorus insecticides by tissue homogenates from mammal and insect. 10426
- Chemistry of insecticides. 10463
- Degradation and anticarboxylesterase activity of disulfoton and phorate after <sup>60</sup>Co gamma irradiation. 10465
- Insecticides, how to use them safely and effectively. 10466
- Note on versatility of silicone Dow Corning 11 substrate for gas chromatography of pesticides. 10482

## ORIBATEI

- New species of beetle mites of the family Chamobatidae (Oribatei) from the USSR. 9940

## ORNAMENTAL PLANTS

- Control of *Brachyrhinus cribricollis* injuring ornamentals. 10269

## ORTHOPTERA

- A revision of the pseudomorphaeridini (Orthoptera: Acridoidea: Pyrgomorphidae). 9909

## ORYZAEPHILUS SURINAMENSIS

- The control of insects in bagged grain by the injection of dichlorvos. 10387

## OSMOTIC PRESSURE

- Water uptake and embryonic development in eggs of *Chorthippus brunneus* Thunberg (Saltatoria: Acrididae). 10079

## OVARIES

- Fine structures of merozoites of *Babesia bigemina* in the ovaries of *Boophilus microplus* and *Boophilus decoloratus*. 10012

- Anatomical indicators for assessing age of mosquitoes: changes in ovarian follicles. 10107

## OVIPOSITION

- Oviposition behaviour of the desert locust (*Schistocerca gregaria* Forsk.). 9971

- Corn stunt vector leafhopper attractancy to and oviposition preference for hybrid dent corn. II. *Graminella nigrifrons*. 9992

- Deviate-ontogenies in the aphelinid male (Hymenoptera) associated with the ovipositional behavior of the parental female. 10006

- Development of *Chrotogonus trachypterus* (Blanch.) (Orthoptera: Pyrgomorphidae) in relation to different levels of temperature and humidity. 10026

- Field observations on periodicity and site preference in oviposition by *Aedes aegypti* (L.) and related mosquitoes (Diptera: Culicidae) in Kenya. 10072

- Anatomical studies of the ovipositional site of plant hoppers and leaf hoppers on rice. 10075

- Oviposition and hatching in two species of ticks in relation to moisture deficit. 10119

- On the oviposition behaviour and development of *Sitophilus oryzae* Linn. in various natural foods. 10127

## OVULATION

- The influence of temperature on reproduction and development in four species of *Glossina* (Diptera: Muscidae). 10028

- Biology of the billbug *Sphenophorus venatus* confluent, a new pest of orchardgrass. 10047

## OXATHIINS

- A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum. 10189

- Chemical control of wheat and barley loose smut. 10194

## OXIDATION

- Conversion of heptachlor to its epoxide. 10478

## OXYDEMETONMETHYL

- Control of *Brachyrhinus cribricollis* injuring ornamentals. 10269

- GLC determination of residues of disulfoton, oxydemetonmethyl, and their metabolites in tobacco plants. 10404

## OXYGEN

- Seasonal evolution of the honey bee thermogenesis. Oxygen consumption of the isolated bee at five different temperatures in summer and in winter. 10123

- Analysis of grain storage problems in India. 10390

## PACIFIC NORTHWEST

- New species of *Chrysobothris* from the Pacific Northwest (Coleoptera: Buprestidae). 9870

## PAINTS

- Marking and recapture of California red scale for field studies. 10101

## PALYNOLOGY

- Pollens collected by species of *Andrena* (Hymenoptera: Apidae). 9986

## PANONYCHUS ULMI

- European red mite and two-spotted spider mite control on apples in California. 10236

## PAPAYAS

- Volatile metabolites from dimethyldithiocarbamate fungicide residues. 10441

## PARAQUAT

- Effects of growth regulators and herbicides on germination of *Hydrilla* turions. 10306

## PARASITIC INSECTS

- Ear mites of the genus *Dicrocheles* (Acarina: Mesostigmata) found on noctuids in Hawkes Bay. 9882

- The subgenus *Persicargas* (Ixodoidea, Argasidae, Argas). 7. A. (P.) walkerae, new species, a parasite of domestic fowl in southern Africa. 9908

- First record of *Aewasius advena* Compere (Encyrtidae: Hymenoptera) from India as a parasite of *Fernisia virgata* Ckll.. 9932

- The influence of ecological and genetic factors on the birth and death of *Macrocheles robustulus* (Berlese, 1904). 10005

- Morphology and biology of a nest-producing mite, *Bakericheyla chanayi* (Acarina: Cheyletidae). 10015

- Laboratory studies of *Eucelatoria armigera*, a tachinid parasite of *Heliothis* spp. 10040

- A model accounting for sympatry in water mites. 10076

- New parasite records on *Hymenia recurvalis* (Fabricius) (Lepidoptera: Pyralidae). 10087

- New records of parasites of *Plutella maculipennis* Curt. in Gujarat, India. 10088

- Biological notes on the bee *Tetralonia minuta* and its cleptoparasite, *Morgania histrio* transvaalensis (Hymenoptera: Anthophoridae). 10109

- Observations on the biology of *Lathromeroides* sp. (Trichogrammatidae: Hymenoptera) egg parasite of the leaf rolling weevil, *Apoderus sissu* Marshall (Curculionidae: Coleoptera) with notes on the host weevil. 10117

- Etology as the determining factor of the numerical distribution of the species in the fauna. 10144

- The parasitism of gamasid mites (Gamasoidea) on birds. 10145

- New record of hymenopterous parasites of *Phytomyza atricornis* (Meigen), a serious pest of pea. 10259

- Control of Florida red scale in Florida with the parasite *Aphytis holoxanthus*. 10264

- Problems in raising ducks. 10357

- Records of pupiparous Diptera (Hippoboscidae) on birds in India-III. 10365

## PARASITISM

- A comparative biological study of three cecropia species (Hem. Coccidae) and their natural enemies. 9990

- On the environment of *Polymorphus minutus* (Acanthocephala) in ducks. 10373



# SUBJECT INDEX

## PESTICIDE RESIDUES

### PARATHION

Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides.

10043

Estimation and dissipation of parathion residue from the crop of Indian rape seed.

10048

On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants.

10149

Chemical control of *Drosicha mangiferae* (Green), a serious pest of *Citrus* spp. in Madhya Pradesh.

10263

Studies on the control of the red hairy caterpillar, *Amsacta moorei* Butler.

10266

Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods.

10409

The difference in sensitivity to the sterilizing action of O,O-diethyl-O-paranitrophenyl thiophosphate of the embryonic testicles of quails and chickens in vitro culture.

10430

### PARLATORIA OLEAE

Biological control of olive scale, *Parlatoria oleae* (Colvée), in a deciduous fruit orchard in California.

10252

### PARROTS

Three new species of *Heteromenopon* (Mallophaga: Menoponidae) from Brazilian and Australian parrots.

9930

### PARTICLE SIZE DETERMINATION

Spray droplet size in the control of spruce budworm, holl weevil, hollworm and cabbage looper.

10247

### PASSALIDAE

Spiracles of adult *Scarabaeoidea* (Coleoptera) and their phylogenetic significance. I. The abdominal spiracles.

9934

### PATENTS

Compositions and methods for regulating the growth of plants. Patent 3,455,673.

10021

Method for repelling bees. patent 3,456,056.

10099

Fungicidal composition containing zinc dithiocarbamate. Patent 3,458,638.

10190

Nematocides. Patent 3,457,353.

10271

Control of aquatic plants with dithiodiundecanoic acid. Patent 3,432,286.

10281

Inactivated hog cholera virus vaccine. Patent 3,456,053.

10330

Tetracycline antibiotic compositions for oral use. Patent 3,454,697.

10337

Tablet dosage-form for the immunization of the intestinal tract with live virus preparations. Patent 3,458,621.

10359

Method for combating micro-organisms. Patent 3,458,636.

10362

N-(substituted-benzoyl) aminoaceto- and aminopropionitriles. Patent 3,457,294.

10460

### PEANUTS

Metabolism of trifluralin in peanuts and sweet potatoes.

10273

### PEARLMILLET

Studies on physiology of *Helminthosporium australiense* the causal agent of a leaf spot disease of bajra.

10226

### PEARS

Biology and control of leopard moth on pear trees in the United Arab Republic.

10242

### PEAS

New record of hymenopterous parasites of *Phytomyza atricornis* (Meigen), a serious pest of pea.

10259

### PEAT

Recovery of mites from peat and mineral soils using a new floatation method.

9975

### PECTINOPHORA GOSSYPIELLA

Hexalure, an insect sex attractant discovered by empirical screening.

10025

### PELLICULARIA

Fungicidal control of rice diseases.

10170

### PENETRATION

Absorption and penetration of picloram in potato tuber discs.

10308

Physico-chemical and biophysical factors affecting the activity of pesticides.

10462

### PENNISETUM MACROURUM

African feather grass--a weed worth watching.

10279

### PENTAC

Histological, behavioral, and symptomatic effects of Pentac on *Tetranychus urticae*.

10018

### PENTACHLORONITROBENZENE

Chemistry of fungicides.

10476

### PENTATOMIDAE

On the odour components of the stink of two heteropteran bugs of India.

9989

Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides.

10043

### PERILLUS BIOCULATUS

The effect of *Perillus bioculatus* (Fabr.) (Het., Pentatomidae) on the population dynamics of the potato beetle.

10124

### PERIPLANETA AMERICANA

An integrated technique to study the effects of fumigants on respiration of insects.

9972

Radiation sensitivity of twelve species of arthropods.

10069

Starvation-induced activity in cockroach malpighian tubules.

10073

Cockroach heart response to cardio-accelerators.

10074

Vitellogenic blood protein synthesis by insect fat body.

10083

Common inhibitory motoneurons in insects.

10089

Isolation and biological properties of the juvenile hormone.

10106

KCl-induced spreading depression and ventilation in the cockroach.

10108

### PEST CONTROL

Metabolism of strychnine nitrate applied for the control of the hear.

10318

Research and education needs in the use of pesticides.

10486

### PESTICIDE ANALYSIS

Surface hydrology and pesticides.

10392

Potentials for removing pesticides from water.

10396

Extraction and gas-liquid chromatographic determination of vernolate in soil.

10467

Acetonitrile extraction and determination of carbaryl in fruits and vegetables.

10475

### PESTICIDE APPLICATION

A method for spraying individual trees.

10282

Response of ironweed and huckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants.

10303

A sprayer for application of small amounts of herbicides to flats.

10314

Pesticide residues in the ecosystem.

10407

Spray gel agent solves drift problem.

10456

An evaluation of herbicide incorporation equipment.

10484

### PESTICIDE RESIDUES

Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper.

10247

Surface hydrology and pesticides.

10392

Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides.

10395

Potentials for removing pesticides from water.

10396

Pesticides and clay minerals.

10397

Movement of pesticides in the soil.

10398

Influence of pesticides on soil microbes and soil properties.

10400

Pesticide residues in the ecosystem.

10407

Industry's concern with pesticide residues.

10411

Modifications of the micromethod of sample cleanup for thin-layer and gas chromatographic separation and determination of common organic pesticide residues.

10413

Activation and standardization of purified silica gel for column chromatographic cleanup of pesticide residue extracts.

10414

Analysis of grains for multiple residues of organic fumigants.

10416

Methods of determining pesticides in food products. (JPRS 34,946).

10418

Structure of pesticides and decomposition by soil microorganisms.

10427

Volatile metabolites from dimethyldithiocarbamate fungicide residues.

10441

Extraction and gas-liquid chromatographic determination of vernolate in soil.

10467

Reactions of pesticides in soils.

10468

Analysis of multiple pesticide residues--chemical identity and confirmation of results.

10473

Acetonitrile extraction and determination of carbaryl in fruits and vegetables.

10475

# SUBJECT INDEX

## PESTICIDES

### PESTICIDES

Influence of pesticides and fertilizers on the behaviour of phytophagous mites in orchards and under laboratory conditions.

10065

Pesticides and plows.

10167

Chemical preparations in the services of agriculture and forestry.

10169

Surface hydrology and pesticides.

10392

Potentials for removing pesticides from water.

10396

Pesticides and clay minerals.

10397

Biodegradation of pesticides.

10422

Endrin induced alterations in bound carbohydrates in rat serum.

10423

Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value.

10445

Physico-chemical and biophysical factors affecting the activity of pesticides.

10462

Reactions of pesticides in soils.

10468

Review of methods for mercury in pesticide formulations.

10469

Note on versatility of silicone Dow Corning 11 substrate for gas chromatography of pesticides.

10482

Research and education needs in the use of pesticides.

10486

### PETROBIA LATENS

Further records of the distribution of *Petrobia latens* (Muller) (Acarina: Tetranychidae), a pest of wheat in India together with the description of a new species of predatory mites on the same.

9920

### PHARYNX

Vaccinated cattle.....can harbor foot and mouth disease.

10331

### PHASMATIDAE

The defensive behaviour of the stick insect *Oncotophasma martini* (Griffini) (Orthoptera: Phasmatidae).

10103

### PHENOLS

The correlation between physiological activity and physicochemical property of the substituted phenols.

10437

### PHENOXY ACID COMPOUNDS

Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants.

10303

### PHENTHOATE

Gas chromatographic determination of ethyl O,O-dimethylthiophosphoryl-l-phenyl acetate in technical grade and its 50 percent liquid formulation.

10457

### PHENYL

#### DIMETHYLPHOSPHORODIAMIDATE

The fate of phenyl N,N'-dimethylphosphorodiamidate in soil.

10401

### PHEROMONES

Sex attractant of female dermestid beetle *Trogoderma inclusum* Le Conte.

10105

### PHLOEM

Evidence for restriction of a plant virus to phloem cells.

10219

### PHORATE

Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries.

10248

Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug. at seedling stage.

10251

Degradation and antcarboxylesterase activity of disulfoton and phorate after 60Co gamma irradiation.

10465

### PHORMIA REGINA

Comparison of effects of irradiation on the primary spermatogonia and mature sperm of three species of Diptera.

10102

### PHOSPHAMIDON

The artificial feeding of phosphamidon to *Myzus persicae*: ii. The effects of phosphamidon on liquid uptake through a parafilm membrane.

10086

Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug. at seedling stage.

10251

### PHOSPHORUS

Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value.

10445

### PHOTOSYNTHESIS

Response to parasites.

10232

Biochemical basis for plant competition.

10274

Effects of pyrazon on growth, photosynthesis, and respiration.

10288

Mechanisms of action of herbicides.

10299

Effects of ammonium thiocyanate on carbohydrate metabolism in the cotton plant.

10455

### PHTHORIMAEA OPERCULELLA

Alternative host plants of tobacco leaf-miner (*Phthorimaea operculella* (Zell.)).

10239

### PHYLLOTRETA

Flea beetles *Phyllotreta cruciferae* Goeze. (Coleoptera, Chrysomelidae) a new pest of stock flower *Mathiola* sp. in Rajasthan.

10110

### PHYSICAL CHEMISTRY

Physico-chemical and biophysical factors affecting the activity of pesticides.

10462

### PHYSIOLOGY

Description, biology, and importance of a new species of Allantonematidae (Nematoda), parasite of the aphidiphagous Coccinellidae: *Parasitylenchus coccinellinae*, n. sp.

10039

The fungitoxic mechanisms in quinoline compounds and their chelates.

10202

The development of the body wall of *Polymorphus minutus* (Acanthocephala) in its intermediate host *Gammarus pulex*.

10370

The effect of gastro-intestinal secretions on taeniid egg membranes.

10374

Specificity and mechanism in the action of saligenin cyclic phosphorus esters.

10424

### PHYTOMETRA BILOBA

Meteorological aspects of insect migrations.

10037

### PHYTOMYZA ATRICORNIS

New record of hymenopterous parasites of *Phytomyza atricornis* (Meigen), a serious pest of pea.

10259

### PHYTOPHAGOUS INSECTS

New Bulgarian fauna of phytophagous wasps (Symphyta, Hymenoptera).

9946

Ecological research in the Lamto Savannah (Ivory Coast): Annual cycle of the population size and biomasses of arthropods in the herbaceous stratum.

10017

Biological control of *Cuscuta* spp. II. Biology and host-plant range of *Melanagromyza cuscutae* Hering (Dipt. Agromyzidae).

10272

### PHYTOPHAGOUS MITES

Influence of pesticides and fertilizers on the behaviour of phytophagous mites in orchards and under laboratory conditions.

10065

### PHYTOTOXICITY

Phytotoxicity of bemethylated analogs of diphenamid.

10290

Basis for selectivity of linuron on carrot and common ragweed.

10295

Effects of growth regulators and herbicides on germination of *Hydrilla* turions.

10306

The correlation between physiological activity and physicochemical property of the substituted phenols.

10437

### PICEA ABIES

Physiological and biochemical contribution to fume damage research, 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter.

10432

### PICEA OMORIKA

Physiological and biochemical contribution to fume damage research, 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter.

10432

### PICLORAM

Response of tropical vegetation to herbicides.

10275

Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants.

10303

Absorption and penetration of picloram in potato tuber discs.

10308

Control of green rabbithrush and big sagebrush with 2,4-D and picloram.

10310

Response of soybeans to 2,4-D, dicamba, and picloram.

10312

### PINE NEEDLES

Physiological and biochemical contribution to fume damage research, 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter.

10432

### PINUS

Life history and damage of the pine root tip weevil, *Hyllobius rhizophagus*, in Wisconsin.

10049

Comparison of mycelial and Sclerotial inoculum of *Macrophomina phaseoli* in the mortality of pine seedlings under varying soil conditions.

10225

### PINUS CONTORTA

Needle miner infestations in lodgepole pine east of the Sierra crest.

10267

### PINUS PALUSTRIS

Light intensity and the absorption and translocation of 2,4,5-T by woody plants.

10276

### PINUS SYLVESTRIS

Physiological and biochemical contribution to fume damage research, 8. Physiological in-



- vestigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter. 10432
- PIPERONYL BUTOXIDE**  
The toxicity to *Triholium castaneum* (Herbst) (Coleoptera, Tenebrionidae) of mixtures of pyrethrins and piperonyl butoxide: Fitting a mathematical model. 10031
- PIRICULARIA ORYZAE**  
Standardization of the international race numbers of *Pyricularia oryzae*. 10198
- PLANOCOCCUS CITRI**  
*Scymnus* (Sidis) *hicki* Fursch, as a foe of *Pseudococcus citri* Risso. 9893  
Studies on an Israel strain of *Anagrus pseudococci* (Girault) (Hym., Encyrtidae). II. Some biological aspects. 9964
- PLANT ABNORMALITIES**  
Colchicine-induced tetraploid azaleas. 10447
- PLANT BIOCHEMISTRY**  
Post-infection changes in the sugar content of leaf-spot infected harley. 10178  
Studies on physiology of *Helminthosporium australiense* the causal agent of a leaf spot disease of bajra. 10226  
Biochemical basis for plant competition. 10274  
Effects of pyrazon on growth, photosynthesis, and respiration. 10288  
EPTC effects on sicklepod petiolar fatty acids. 10315  
Physiological and biochemical contribution to fumc damage research, 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter. 10432  
Discovery of sinigrin as a phagostimulant by *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 10433  
Influence of atrazine (2-chloro-4-ethylamino-6-isopropylamino-5-triazine) on auxin metabolism of plants. 10434  
The correlation between physiological activity and physicochemical property of the substituted phenols. 10437  
Effect of dichloro diphenyl trichloro-ethane (DDT) on leghemoglobin content of root nodules of *Phaseolus aureus* (green gram). 10438  
Cytokinins and transfer ribonucleic acids. II. Presence of cytokinins in different amino-acid specific transfer ribonucleic acids of brewer's yeast as revealed by the growth response of tobacco-pith callus tissue and *Scorzonera crown-gall* tissue. 10439  
The mode of action of malic hydrazide: Inhibition of growth. 10444  
Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value. 10445  
A survey of the chemical composition of *Potamogeton* and *Myriophyllum* in New Jersey. 10448
- PLANT BREEDING**  
Breeding for rust resistance. Advances in genetics give hope for total immunity. 10211  
Bees as pests. 10244
- PLANT DISEASE CONTROL**  
Elements for the differentiated application of quarantine and control measures of potato canker. 10221
- PLANT DISEASE RESISTANCE**  
Corn stunt vector leafhopper attractancy to and oviposition preference for hybrid dent corn. II. *Graminella nigrifrons*. 9992  
Verticillium wilt of tobacco. VI. The influence of roots and stems on Verticillium wilt symptoms in tobacco. 10186  
Breeding for rust resistance. Advances in genetics give hope for total immunity. 10211  
Verticillium wilt of tobacco. VIII. Movement of conidia of Verticillium dahliae Kleb. in tobacco plants. 10230
- PLANT DISEASE TRANSMISSION**  
Translocation of tobacco ringspot virus in cucumber and zinnia. 10206  
Verticillium wilt of tobacco. VIII. Movement of conidia of Verticillium dahliae Kleb. in tobacco plants. 10230  
Common leafhopper-plant hopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234  
Comparative efficiency of transmission of aster yellows by *Elymana virescens* and *Macrostelus fascifrons* and the relative concentration of the causal agent in the vectors. 10238  
Efficiency of three colonies of melon aphids as transmitters of Tristeza virus. 10258
- PLANT DISEASES**  
Fungicidal control of rice diseases. 10170  
Nutrition of the silver-leaf pathogen *Stercum purpureum* (Pers.) Fri. 10175  
Interaction between chilli mosaic and powdery mildew in tobacco. 10176  
Post-infection changes in the sugar content of leaf-spot infected harley. 10178  
Verticillium wilt of tobacco. VI. The influence of roots and stems on Verticillium wilt symptoms in tobacco. 10186  
Some observations on *Cynips quercus folii* L. galls on *Quercus robur* L. in Bydgoszcz province. 10203  
Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts. 10204  
Toxic metabolite of *Aspergillus niger* and its role in onion rot disease. 10208  
*Heterobasidion annosum*. 10215  
*Phellinus igniarius*. 10216  
*Phellinus pomaceus*. 10217  
*Inonotus hispidus*. 10218  
Evidence for restriction of a plant virus to phloem cells. 10219  
Studies on physiology of *Helminthosporium australiense* the causal agent of a leaf spot disease of bajra. 10226  
A necrotic type virus occurring on a weed in Germany. 10227
- Preliminary note on the occurrence of black point disease of wheat in India. 10228  
Verticillium wilt of tobacco. VIII. Movement of conidia of Verticillium dahliae Kleb. in tobacco plants. 10230  
Verticillium wilt of tobacco. VII. Pathogenicity of isolates of Verticillium dahliae Kleb. on New Zealand tobacco. 10231
- PLANT DORMANCY**  
Effects of 2,4,5-T during the approach of woody plant dormancy. 10311
- PLANT ECOLOGY**  
Biochemical basis for plant competition. 10274  
Influence of weed competition on sorghum growth. 10277  
Seed dormancy and germination in ecotypes of johnsongrass. 10309  
Competition between flax and wild buckwheat. 10440
- PLANT EXTRACTS**  
Gas chromatographic determination of residues of Dalapon in several substrates. 10410  
Researches on *Galega* species regarding their content of toxins by means of biological methods. I. Toxicity of goats-ruc (*Galega officinalis* L.) for warmblooded animals. 10428
- PLANT GALLS**  
A note on the occurrence of fruit fly maggots of *Dacus cucurbitae* Coq. in cecidomyiid galls of *Coccinia indica* in Andhra Pradesh. 9998  
Some observations on *Cynips quercus folii* L. galls on *Quercus robur* L. in Bydgoszcz province. 10203
- PLANT GENETICS**  
Variations of the culture of *Fusarium moniliforme* induced by N-nitrosoethylurea and ethyl methanesulfonate. 10435
- PLANT GEOGRAPHY**  
*Heterobasidion annosum*. 10215  
*Phellinus igniarius*. 10216  
*Phellinus pomaceus*. 10217  
*Inonotus hispidus*. 10218
- PLANT GRAFTING**  
Verticillium wilt of tobacco. VI. The influence of roots and stems on Verticillium wilt symptoms in tobacco. 10186
- PLANT GROWTH INHIBITORS**  
Progress report on shade tree inhibition. (abstract). 10442  
The mode of action of malic hydrazide: Inhibition of growth. 10444  
The effect of N-dimethyl amino succinamic acid (Alar) on size, shape and maturity of Delicious apples. 10450
- PLANT GROWTH REGULATOR**  
Effects of growth regulators and herbicides on germination of Hydrilla turions. 10306  
Plant growth regulators. 10436
- PLANT HARDINESS**  
Physiological and biochemical contribution to fumc damage research, 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter. 10432

# SUBJECT INDEX

## PLANT HISTOLOGY

### PLANT HISTOLOGY

Studies on the infection of cucumber mosaic virus. V. the observation of epidermal cell in the local lesion.

10180

### PLANT HORMONES

Influence of atrazine (2-chloro-4-ethylamino-6-isopropylamino-5-triazine) on auxin metabolism of plants.

10434

### PLANT INJURIES

Life history and damage of the pine root tip weevil, *Hylobius rhizophagus*, in Wisconsin.

10049

Studies on the infection of cucumber mosaic virus. V. the observation of epidermal cell in the local lesion.

10180

Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts.

10204

Local lesion host for grassy shoot virus of sugarcane.

10224

Response to parasites.

10232

The biology, mode of attack and damage caused by the thrips, (*Haplothrips tritici* Kurd) to wheat crops.

10235

A review of the use of insecticides on the main agricultural crops of the world--3. Section 3: Cotton.

10245

*Atherigona* sp. (Anthomyiidae: Diptera) as a pest of wheat in Rajasthan.

10250

The effects of two phytobland oils on the postemergence activity of bromoxynil and DNBP applied in two spray volumes in alfalfa.

10316

Effects of high rates of trifluralin and vernolate on soybean yield and growth.

10317

Physiological and biochemical contribution to fume damage research. 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter.

10432

### PLANT METABOLISM

Toxic metabolite of *Aspergillus niger* and its role in onion rot disease.

10208

Response to parasites.

10232

Metabolism of trifluralin in peanuts and sweet potatoes.

10273

Metabolism of organic pesticide chemicals in higher plants.

10278

Translocation of assimilates and dalapon in established johnsongrass.

10292

Basis for selectivity of linuron on carrot and common ragweed.

10295

Mechanisms of action of herbicides.

10299

Physiological and biochemical contribution to fume damage research. 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter.

10432

Influence of atrazine (2-chloro-4-ethylamino-6-isopropylamino-5-triazine) on auxin metabolism of plants.

10434

Volatile metabolites from dimethyldithiocarbamate fungicide residues.

10441

Degradation of p32-homophos by microorganisms and seedlings.

10449

Effects of ammonium thiocyanate on carbohydrate metabolism in the cotton plant.

10455

### PLANT NEMATODES

Translocation of tobacco ringspot virus in cucumber and zinnia.

10206

### PLANT NUTRITION

In your garden - weeds: Robbers, but not always had.

10168

Nutrition of the silver-leaf pathogen *Stereum purpureum* (Pers.) Fri.

10175

### PLANT PEST CONTROL

Pesticides and plows.

10167

Chemical preparations in the services of agriculture and forestry.

10169

Role of hermit crabs in the biological control of *Achatina fulica* (Bowdich) on the Andamans.

10321

### PLANT PEST RESISTANCE

Twenty-six varieties of forage crops evaluated for resistance to feeding by *Melanoplus sanguinipes*.

10246

### PLANT PHYSIOLOGY

Anatomical studies of the ovipositional site of plant hoppers and leaf hoppers on rice.

10075

Some observations on *Cynips quercus folii* L. galls on *Quercus robur* L. in Bydgoszcz province.

10203

Mode of action of agricultural antibiotics developed in Japan.

10205

Evidence for restriction of a plant virus to phloem cells.

10219

Studies on physiology of *Helminthosporium australiense* the causal agent of a leaf spot disease of bajra.

10226

Biochemical basis for plant competition.

10274

Light intensity and the absorption and translocation of 2,4,5-T by woody plants.

10276

Influence of weed competition on sorghum growth.

10277

Absorption and translocation of pyrazon by plants.

10287

Effects of pyrazon on growth, photosynthesis, and respiration.

10288

Translocation of assimilates and dalapon in established johnsongrass.

10292

Effect of nitrogenous materials on the uptake of triazine herbicides.

10298

Chemical stimulation of ethylene evolution and bud growth.

10300

Effect of soil water stress and soil temperature on translocation of diuron.

10302

Translocation of the herbicide dicamba in purple nutsedge, *Cyperus rotundus*.

10304

Absorption and penetration of picloram in potato tuber discs.

10308

Response of soybeans to 2,4-D, dicamba, and picloram.

10312

EPTC effects on sicklepod petiolar fatty acids.

10315

Influence of pesticides on soil microbes and soil properties.

10400

Cell physiology investigations of the action of new triazine derivatives on petiole epidermis of *Solanum tuberosum* L.

10431

Physiological and biochemical contribution to fume damage research. 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter.

10432

Influence of atrazine (2-chloro-4-ethylamino-6-isopropylamino-5-triazine) on auxin metabolism of plants.

10434

Effect of dichloro diphenyl trichloro-ethane (DDT) on leghemoglobin content of root nodules of *Phaseolus aureus* (green gram).

10438

On the inhibitory effect of yeast ribonucleic acid on the infection of *Nicotiana glutinosa* by tobacco mosaic virus.

10443

Photocontrol of rough cinquefoil seed germination and its enhancement by temperature manipulation and KNO<sub>3</sub>.

10451

Reversion of senescence: Effects of 2,4-dichlorophenoxyacetic acid and indoleacetic acid on respiration, ethylene production, and ripening of banana fruit slices.

10452

Effects of gibberellin A3 on fruit shape and subsequent seed dormancy of apple.

10453

Distribution of miserotoxin in varieties of *Asragalus miser* Dougl. ex Hook.

10454

### PLANT PROTECTION

In your garden - weeds: Robbers, but not always bad.

10168

### PLANT QUARANTINE

Elements for the differentiated application of quarantine and control measures of potato canker.

10221

### PLANT REGULATORS

Compositions and methods for regulating the growth of plants. Patent 3,455,673.

10021

Effects of gibberellin A3 on fruit shape and subsequent seed dormancy of apple.

10453

### PLANT RESPIRATION

Response to parasites.

10232

Effects of pyrazon on growth, photosynthesis, and respiration.

10288

Reversion of senescence: Effects of 2,4-dichlorophenoxyacetic acid and indoleacetic acid on respiration, ethylene production, and ripening of banana fruit slices.

10452

### PLANT TRANSLOCATION

Translocation of the herbicide dicamba in purple nutsedge, *Cyperus rotundus*.

10304

### PLANT WATER RELATIONS

Water florae as indicators of irrigation water contamination by DDT.

10403

### PLANTS

A supplementary list of the host-plants of lac insects.

10135

On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants.

10149



- Alternative host plants of tobacco leaf-miner (*Phthorimaea operculella* (Zell.)). 10239
- Consequences of insecticide use of nontarget organisms. 10402
- PLATYGASTERIDAE**  
A new species of *Trichacoides* from India with a redescription of *T. scutellaris* Dodd (Hymenoptera: Platygasteridae). 9906
- PLECOPTERA**  
The life histories and drifting of the Plecoptera and Ephemeroptera in a dartmoor stream. 10001  
Experimental studies on diapause in stoneflies. III. Eggs of *Brachyptera risi* (Morton). 10051
- PLODIA INTERPUNCTELLA**  
Biochemical study of *Plodia interpunctella* (Hbn.) (Lepidoptera) I--Variations of body weight, water content, and dry matter content. 9993  
Sexual dimorphism in neutral lipid metabolism in the Indian-meal moth, *Plodia interpunctella* (Huhner). 10143
- PLOWS**  
Pesticides and plows. 10167
- PLUMS**  
*Phellinus pomaceus*. 10217
- PLUSIINAE**  
Characters for identification of some common plusiine caterpillars of the southeastern United States. 9889  
Distribution of larval and pupal instars of *Plusia argentifera* Guen. on tobacco plants. 10240
- PLUTELLA MACULIPENNIS**  
New records of parasites of *Plutella maculipennis* Curt. in Gujarat, India. 10088
- PNEUMOSTRONGYLUS TENUIS**  
*Pneumoststrongylus tenuis* in moose on a deer-free island. 10375
- POISONOUS PLANTS**  
Ruhher-vine (*Cryptostegia grandiflora*) toxicity for ruminants. 10346  
Researches on *Galega* species regarding their content of toxins by means of biological methods. I. Toxicity of goats-ruc (*Galega officinalis* L.) for warmblooded animals. 10428  
Distribution of miscrotoxin in varieties of *As-tragalus miser* Dougl. ex Hook. 10454
- POISONS**  
Distribution of miscrotoxin in varieties of *As-tragalus miser* Dougl. ex Hook. 10454
- POLAROGRAPHY**  
Collaborative study of confirmative procedures by single sweep oscillographic polarography for the determination of organophosphorus pesticide residues in nonfatty foods. 10409
- POLISTES**  
The effects of the removal of the parasite *Xenos* (insecta Strepsiptera) on the protocerebral neurosecretion of its host *Polistes* (Hym. Vespidae). 10121
- POLYGONUM CONVULVULUS**  
Competition between flax and wild buckwheat. 10440
- POLYHEDROSES**  
Helicopter sprayers may rescue infested forests. 9959  
A strain of nuclear-polyhedrosis virus causing extensive cellular hypertrophy. 10126
- POLYMORPHISM**  
The structure of polymorphic species of the subgenus *Autolethrus* (Coleoptera, Scarabacidae) from South Kazakhstan. 9924  
Homologous lines of chromosome polymorphism in the natural populations of Adirondack black fly (Diptera, Simuliidae). 10150  
Chromosomal polymorphism and genetic load in *Drosophila pseudoobscura*. 10153
- POLYMORPHUS BOSCHADIS**  
The development of the body wall of *Polymorphus minutus* (Acanthocephala) in its intermediate host *Gammarus pulex*. 10370  
On the environment of *Polymorphus minutus* (Acanthocephala) in ducks. 10373
- POLYPLOIDY**  
Colechicine-induced tetraploid azaleas. 10447
- POLYPORUS**  
*Heterobasidion annosum*. 10215  
*Phellinus igniarius*. 10216  
*Phellinus pomaceus*. 10217
- POLYPORUS HISPIDUS**  
*Inonotus hispidus*. 10218
- POPILLIA JAPONICA**  
Course of sporulation of *Bacillus popilliae* in liquid medium containing activated carbon. 10029
- POPULATION**  
Colonization of an island by the buffalo fly, *Haematobia exigua*. 10004  
The influence of ecological and genetic factors on the birth and death of *Macrocheles robustulus* (Berlese, 1904). 10005  
The insect predators of the pupal stage of the winter moth, *Operophtera brumata* (L.) (Lepidoptera: Hydrimenidae). 10009  
The effect of pupal predators on a population of winter moth, *Operophtera brumata* (L.) (Hydrimenidae). 10010  
Ecological research in the Lamto Savannah (Ivory Coast): Annual cycle of the population size and biomasses of arthropods in the herbaceous stratum. 10017  
A study of a pocket of scattered desert locust population in Rajasthan, India during 1966 with special reference to cyc-strips and biometrics. 10027  
Studies and suggestions on the behaviour of moths at light. 10033  
Spaced-out gregariousness in sycamore aphids *Drepanosiphum platanoides* (Schrank) (Hemiptera, Callaphididae). 10050  
The ecology of the Simuliidae in a Scottish river. 10062  
Age-distribution and abundance in populations of flour beetles. I. Experimental studies. 10071  
A model accounting for sympatry in water mites. 10076  
Entomocoenological and biological studies in *Rosa damascena* Mill. plantations. II. Coleoptera. 10081  
The effect of *Perillus bioculatus* (Fabr.) (Het., Pentatomidae) on the population dynamics of the potato beetle. 10124
- Etology as the determining factor of the numerical distribution of the species in the fauna. 10144
- Evolution of fitness. IV. Genetic evolution of inter-specific competitive ability in *Drosophila*. 10146
- On the determination of insect and mite resistance to pesticides. The influence of these products in sublethal doses on animals and in the trophic effect following biochemical repercussions on plants. 10149
- Population genetics in the American tropics. IV. Temporal changes effected in natural populations of *Drosophila melanogaster* from Colombia. 10156
- A molecular approach to the study of genic heterozygosity in natural populations. IV. Patterns of genic variation in central, marginal and isolated populations of *Drosophila pseudoobscura*. 10159
- Structure, stability, and energy flow in plants and arthropods in a sericea *Lespedeza* stand. 10255
- The effect of removal of arthropod predators on an infestation of *Brevicoryne brassicae* (Hemiptera, Aphididae) on brussels sprouts. 10260
- Control of Florida red scale in Florida with the parasite *Aphytis holoxanthus*. 10264
- Influence of weed competition on sorghum growth. 10277
- Yellow foxtail competition in grain sorghum. 10284
- Role of hermit crabs in the biological control of *Achatina fulica* (Bowdich) on the Andamans. 10321
- A study of the mites of the Gamasoidea superfamily (Parasitiformes) infesting small mammals on the Vitosha Mountain. 10364
- Competition between flax and wild buckwheat. 10440
- POPULUS**  
An interesting case of adaptation to various hosts on the part of an egg parasite. 9985  
*Phellinus igniarius*. 10216
- PORTHETRIA DISPAR**  
Laboratory and field experiments on the effectiveness of purified and non-purified nuclear polyhedral virus of *Lymantria dispar* L.. 10061  
Symposium on the principles of the application of microbiological preparations in nature. 10249
- POTAMOGETON**  
A survey of the chemical composition of *Potamogeton* and *Myriophyllum* in New Jersey. 10448
- POTASSIUM**  
Retention of intra-cellular potassium by the housefly. 10113
- POTASSIUM CHLORIDE**  
KCl-induced spreading depression and ventilation in the cockroach. 10108
- POTASSIUM NITRATE**  
Effect of nitrogenous materials on the uptake of triazine herbicides. 10298  
Seed dormancy and germination in ecotypes of johnsongrass. 10309  
Photocontrol of rough cinquefoil seed germination and its enhancement by temperature manipulation and KNO<sub>3</sub>. 10451

# SUBJECT INDEX

## POTASSIUM PERMANGANATE

### POTASSIUM PERMANGANATE

Rhizoctonia leaf rot of colocasia in India. 10188

### POTATOES

Elements for the differentiated application of quarantine and control measures of potato canker. 10221

1967 pre-emergence weed control in potatoes on Long Island. 10289

Absorption and penetration of picloram in potato tuber discs. 10308

Cell physiology investigations of the action of new triazine derivatives on petiole epidermis of *Solanum tuberosum* L. 10431

### POTENTILLA

Photocontrol of rough cinquefoil seed germination and its enhancement by temperature manipulation and KNO<sub>3</sub>. 10451

### POULTRY

The subgenus *Persicargas* (Ixodoidea, Argasidae, Argas). 7. A. (P.) walkerae, new species, a parasite of domestic fowl in southern Africa. 9908

### POULTRY DISEASES

Problems in raising ducks. 10357

On the environment of *Polymorphus minutus* (Acanthocephala) in ducks. 10373

Transmission of histomoniasis with male *Heterakis gallinarum* (Nematoda). 10383

### POULTRY FARM MANAGEMENT

Problems in raising ducks. 10357

### POWDERY MILDEW

Interaction between chilli mosaic and powdery mildew in tobacco. 10176

### PREDACEOUS INSECTS

*Scyrnus* (Sidis) hickiei Fursch, as a foe of *Pseudococcus citri* Risso. 9893

Further records of the distribution of *Petrobia latens* (Muller) (Acarina: Tetranychidae), a pest of wheat in India together with the description of a new species of predatory mites on the same. 9920

Notes on the biology of *Diatracophaga striatalis* Townsend, tachinid parasite of *Proceras sacchariphagus* Boj. 9970

Wasps attacking other insects. 9979

An interesting case of adaptation to various hosts on the part of an egg parasite. 9985

The Ephippigerinae (Orthoptera, Tettigoniidae) occasional but important predators of *Thaumetopoea pityocampa* Schiff. 9996

The insect predators of the pupal stage of the winter moth, *Operophtera brumata* (L.) (Lepidoptera: Hydrimenidae). 10009

The effect of pupal predators on a population of winter moth, *Operophtera brumata* (L.) (Hydrimenidae). 10010

Insect parasites of the green peach aphid, *Myzus persicae* Sulz. and their control potential. 10059

*Eretmocerus corni* Hald. (Hym., Aphelinidae), a parasite of *Siphoninus phillyreae* Halid. (Hom., Aleyrodidae). 10070

Biology and description of immature stages of *Orthacheta hirtipes*, a predator of *Cordilura* spp. 10080

The predatory and reproductive behaviour of *Rhinocoris hicolor* and *R. tropicus* (Hemiptera: Reduviidae). 10085

A new record, *Dorylus labiatus* Shuck. (Hymenoptera: Formicidae) as a predator of *Microtermes mycophagus* Desn. (Isoptera: Termitidae). 10112

The effect of *Perillus bioculatus* (Fabr.) (Het., Pentatomidae) on the population dynamics of the potato beetle. 10124

Contribution to the knowledge of the natural enemies of *Bissetia steniellus* (Hampson) (Lep.: Pyralidae). 10254

The effect of removal of arthropod predators on an infestation of *Brevicoryne brassicae* (Hemiptera, Aphididae) on Brussels sprouts. 10260

### PROCERAS SACCHARIPHAGUS

Notes on the biology of *Diatracophaga striatalis* Townsend, tachinid parasite of *Proceras sacchariphagus* Boj. 9970

### PRODENIA LITURA

Morphology of the nervous system of adult *Prodenia litura*. 10064

### PROPANETHIOL, 1-

Extraction and gas-liquid chromatographic determination of vernolate in soil. 10467

### PROPYL N,N-DIPROPYLTHIOLCARBAMATE

Effects of high rates of trifluralin and vernolate on soybean yield and growth. 10317

### PROSOPIS JULIFLORA

Chemical stimulation of ethylene evolution and bud growth. 10300

### PROSPALTELLA AURANTII

Note on *Prospaltella aurantii* How. (Hym., Aphelinidae), parasite of *Quadraspidiotus pyri* Licht. in the Maritime Alps (Hom., Diaspidinae). 9967

### PROTEINS

Female specific protein: Biosynthesis controlled by corpus allatum in *Leucophaea maderae*. 10002

Proteins in the spermathecae and haemolymph of the queen bee (*Apis mellifica* L. var. *ligustica* Spin.). 10057

A molecular approach to the study of genic heterozygosity in natural populations. IV. Patterns of genic variation in central, marginal and isolated populations of *Drosophila pseudoobscura*. 10159

Mechanisms of action of herbicides. 10299

Vitamin A metabolism in protein deficiency. 10324

Analytical studies on extracts of *Litosomoides carinii*. 10341

### PRUNING

Progress report on shade tree inhibition. (abstract). 10442

### PSEUDALETIA UNIPUNCTA

A strain of nuclear-polyhedrosis virus causing extensive cellular hypertrophy. 10126

### PSEUDEUCOILA BOCHEI

Inhibition of the defense reaction of *Drosophila melanogaster* parasitized simultaneously by the wasps *Pseudeucoila bochei* and *Pseudeucoila mellipes*. 10122

### PSEUDEUCOILA MELLIPES

Inhibition of the defense reaction of *Drosophila melanogaster* parasitized simultaneously by the

wasps *Pseudeucoila bochei* and *Pseudeucoila mellipes*. 10122

### PSEUDOMONAS FLUORESCENS

Delayed lethal effect of 2,4-dichlorophenoxyacetic acid on bacteria. 10429

### PSYCHODIDAE

On *Sergentomyia ruttledgei* (Lewis Kirk) and *S. schwetzi* (Adler, Theodor Parrot) (Diptera: Psychodidae). 9915

### PUPAE

Description of the male, pupa, and larval habitat of *Nilobezzia brevicornis* (Diptera: Ceratopogonidae). 9963

Variations in free amino acids in the larvae and pupae of *Chilo zonellus*. 9994

The influence of the rearing temperature on larval and pupal mortality and the duration of development of *Drosophila*. 9995

The insect predators of the pupal stage of the winter moth, *Operophtera brumata* (L.) (Lepidoptera: Hydrimenidae). 10009

The effect of pupal predators on a population of winter moth, *Operophtera brumata* (L.) (Hydrimenidae). 10010

The influence of temperature on reproduction and development in four species of *Glossina* (Diptera: Muscidae). 10028

Biology of the billbug *Sphenophorus venatus* confluent, a new pest of orchardgrass. 10047

Biology and description of immature stages of *Orthacheta hirtipes*, a predator of *Cordilura* spp. 10080

Pupal duration in *Glossina morsitans orientalis* under conditions of constant temperature. 10091

Lethal temperatures for puparia of *Glossina morsitans orientalis*. 10092

Effects of exogenous moulting hormones on puparium formation in *Calliphora*. 10130

Refined defensive mechanisms in *Chrysomela scripta*. 10139

Position effect on DNA transcription and replication. 10160

A new species of *Aedes* (*Stegomyia*) from Thailand (Diptera: Culicidae). 10164

Distribution of larval and pupal instars of *Plusia argentifera* Guen. on tobacco plants. 10240

Records of pupiparous Diptera (Hippoboscidae) on birds in India-III. 10365

### PYRALIDAE

A new pyralid leaf roller, *Phostria* sp. on sugarcane. 10046

Contribution to the knowledge of the natural enemies of *Bissetia steniellus* (Hampson) (Lep.: Pyralidae). 10254

### PYRAZON

Behavior of pyrazon in soil. 10286

Absorption and translocation of pyrazon by plants. 10287

Effects of pyrazon on growth, photosynthesis, and respiration. 10288

Weed control in sugarbeets. 10296



# SUBJECT INDEX

## RIBONUCLEIC ACID

### PYRENOPHORA AVENAE

Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants.

10223

### PYRETHRUM

The toxicity to *Tribolium castaneum* (Herbst) (Coleoptera, Tenebrionidae) of mixtures of pyrethrins and piperonyl butoxide: Fitting a mathematical model.

10031

Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper.

10247

Chemistry of insecticides.

10463

### PYRGOMORPHIDAE

A revision of the pseudomorphaeridini (Orthoptera: Acridoidea: Pyrgomorphidae).

9909

### PYRUVATE KINASE

Pyruvate kinase and phosphoenolpyruvate carboxykinase activities of *Ascaris* muscle, *Hymenolepis diminuta* and *Schistosoma mansoni*.

10369

### QUAIL

The difference in sensitivity to the sterilizing action of O,O-diethyl-O-paranitrophenyl thiophosphate of the embryonic testicles of quails and chickens in in vitro culture.

10430

### QUANTITATIVE ANALYSIS

Quantitative determination of uric acid in insect feces by lithium carbonate extraction and the enzymatic-spectrophotometric method.

9973

Extraction, separation, and GLC detection of silvex and its propylene glycol ether ester in fish tissue.

10421

Rapid method for the extraction, cleanup, and GLC determination of toxic residues of temik.

10471

### QUEDIUS

Contribution to the knowledge of the Staphylinidae. CI. Diverse remarks on some *Quedius* from the eastern Mediterranean.

9890

*Quedius* (*Microsaurus*) *scitus* (Grav.) (Col., Staphylinidae) a teratological specimen.

9955

### QUEEN BEES

Proteins in the spermathecae and haemolymph of the queen bee (*Apis mellifica* L. var. *ligustica* Spin.).

10057

### QUERCUS LAEVIS

Effects of 2,4,5-T during the approach of woody plant dormancy.

10311

### QUERCUS NIGRA

Light intensity and the absorption and translocation of 2,4,5-T by woody plants.

10276

### QUERCUS ROBUR

Some observations on *Cynips quercus folii* L. galls on *Quercus robur* L. in Bydgoszcz province.

10203

### QUERCUS STELLATA

Light intensity and the absorption and translocation of 2,4,5-T by woody plants.

10276

### QUINOLINE

The fungitoxic mechanisms in quinoline compounds and their chelates.

10202

### RABBITS

Abundance of cottontails and their fleas at Red Bluff Ranch, New Mexico.

10007

### RABIES

Case of rabies in guinea pig with long incubation period.

10348

Immune lysis of rabies virus-infected cells.

10361

### RABIES VACCINES

Immunogenicity of concentrated and purified rabies vaccine of tissue culture origin.

10360

### RABIES VIRUS

Rabies diagnosis. Observations on strains of virus with low pathogenicity.

10349

### RADIATION

Radiation sensitivity of twelve species of arthropods.

10069

Degradation and anticomplexesterase activity of disulfoton and phorate after <sup>60</sup>Co gamma irradiation.

10465

### RADIOACTIVE TRACERS

The utilization of C<sup>14</sup>-labelled adenosine diphosphate during the in vitro respiration of housefly sarcosomes.

9984

The insect predators of the pupal stage of the winter moth, *Operophtera brumata* (L.) (Lepidoptera: Hydrimenidae).

10009

Vitellogenic blood protein synthesis by insect fat body.

10083

Translocation of assimilates and dalapon in established johnsongrass.

10292

Volatile metabolites from dimethyldithiocarbamate fungicide residues.

10441

Degradation of p32-bromophos by microorganisms and seedlings.

10449

### RADIOISOTOPES

The fate of phenyl N,N'-dimethylphosphorodiamidate in soil.

10401

### RADISHES

Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug. at seedling stage.

10251

### RAINFALL

Pesticides and clay minerals.

10397

### RANGES

Downy brome control by soil-active herbicides for revegetation of rangelands.

10283

### RAPE

Phytotoxicity of bemethylated analogs of diphenamid.

10290

### RATS

Vitamin A metabolism in protein deficiency.

10324

Effect of manganese and cobalt on ascorbic acid metabolism in rats.

10352

Endrin induced alterations in bound carbohydrates in rat serum.

10423

### REDUVIIDAE

Palaearctic species from the genus *Phymata* Latreille, 1802 (Hem. Het. Reduviidae).

9907

The predatory and reproductive behaviour of *Rhinocoris bicolor* and *R. tropicus* (Hemiptera: Reduviidae).

10085

### REPRODUCTION

Studies on an Israel strain of *Anagrus pseudococci* (Girault) (Hym., Encyrtidae). II. Some biological aspects.

9964

Deviate-ontogenies in the aphelinid male (Hymenoptera) associated with the ovipositional behavior of the parental female.

10006

Spermatophores of the Blattaria.

10024

The predatory and reproductive behaviour of *Rhinocoris bicolor* and *R. tropicus* (Hemiptera: Reduviidae).

10085

### REPRODUCTIVE ORGANS

Notes on the male germ cells of a beetle, *Lep-tinotarsa decemlineata*.

10115

### RESEARCH

Research and education needs in the use of pesticides.

10486

### RESPIRATORY DISEASES

Problems in raising ducks.

10357

### RETICULITERMES FLAVIPES

*Antennopsis gallica* Heim and Buehli (hyphomycetes: Gloecohastoriales), an entomogenous fungus on subterranean termites in Florida.

10022

### REVIEWS

Caddis larvae.

9904

Temperature effects on embryonic development in insects.

10035

Diplogasterid nematodes (Diplogasteridae: Rhabditida) and their relationship to insect disease.

10094

Allergic responses to insects.

10166

Response to parasites.

10232

A review of the use of insecticides on the main agricultural crops of the world--3. Section 3: Cotton.

10245

Integrated control of insects. A challenge for scientists.

10265

Metabolism of organic pesticide chemicals in higher plants.

10278

Mechanisms of action of herbicides.

10299

### RHABDITIS

Diplogasterid nematodes (Diplogasteridae: Rhabditida) and their relationship to insect disease.

10094

### RHIPICEPHALUS BURSA

Microscopical studies on the development of *Babesia ovis* in *Rhipicephalus bursa* (Ixodoidea). I. Development in female ticks after repletion.

10013

### RHIZOCTONIA

Rhizoctonia leaf rot of colocasia in India.

10188

### RHIZOPERTHA DOMINICA

Studies on insect damage and germination of seeds. III. Germination of wheat jowar and maize seeds damaged by the developing grubs of *Sitophilus oryzae* L. and *Rhizopertha dominica* F..

10270

### RHIZOPUS

Seed-mycoflora of musk-melon.

10193

### RHYNCHOSCIARA

Changes in chromosomes induced by different DNA virus in cells of *Rhynchosciara angelae*.

10158

### RHYZOPERTHA DOMINICA

A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhyzopertha dominica* (F.) in wheat.

10237

### RIBONUCLEIC ACID

Cytokinins and transfer ribonucleic acids. II. Presence of cytokinins in different amino-acid specific transfer ribonucleic acids of brewer's

# SUBJECT INDEX

## RICE

yeast as revealed by the growth response of tobacco-pith callus tissue and *Scorzonera* crown-gall tissue.

10439

On the inhibitory effect of yeast ribonucleic acid on the infection of *Nicotiana glutinosa* by tobacco mosaic virus.

10443

## RICE

Anatomical studies of the ovipositional site of plant hoppers and leaf hoppers on rice.

10075

Fungicidal control of rice diseases.

10170

The epiphytotic of yellow orange leaf disease of rice in 1966 in Thailand.

10197

Standardization of the international race numbers of *Pyricularia oryzae*.

10198

Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots.

10234

Industry's concern with pesticide residues.

10411

## RICKETTSIA

Spermatocyte granules in *Drosophila melanogaster*.

10003

## RING SPOT

Translocation of tobacco ringspot virus in cucumber and zinnia.

10206

## RODENTS

Analytical studies on extracts of *Litosomoides carinii*.

10341

## ROE

Problems with DDT in fish culture operations.

10406

## RONNEL

Variability in insecticide tolerance of eighteen honey-bee colonies.

10125

## ROOTS

Verticillium wilt of tobacco. VI. The influence of roots and stems on *Verticillium* wilt symptoms in tobacco.

10186

Verticillium wilt of tobacco. VIII. Movement of conidia of *Verticillium dahliae* Kleb. in tobacco plants.

10230

Effect of dichloro diphenyl trichloro-ethane (DDT) on leghemoglobin content of root nodules of *Phaseolus aureus* (green gram).

10438

## ROSA

Entomocoenological and biological studies in *Rosa damascena* Mill. plantations. II. Coleoptera.

10081

## ROT

Rhizoctonia leaf rot of colocasia in India.

10188

A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum.

10189

*Phellinus igniarius*.

10216

*Phellinus pomaceus*.

10217

## ROTENONE

Thin layer densitometric determination of rotenone and deguelin.

10461

Chemistry of insecticides.

10463

## RUMINANTS

Rubber-vine (*Cryptostegia grandiflora*) toxicity for ruminants.

10346

## RUST

Breeding for rust resistance. Advances in genetics give hope for total immunity.

10211

## SALICYLALDEHYDE

Refined defensive mechanisms in *Chrysomela scripta*.

10139

## SALIX

*Phellinus igniarius*.

10216

## SALMONELLA PULLORUM

Isolation of *Salmonella pullorum* from a caseous nodular in the orbital region of a chick Arbor Acres breed.

10338

## SALMONELLA TYPHIMURIUM

A *Salmonella typhimurium* involved in the regulation of isoleucine, valine and leucine biosynthesis.

10326

Operator constitutive mutations in the leucine operon of *Salmonella typhimurium*.

10329

## SALMONELLOSIS

Problems in raising ducks.

10357

## SANITATION

Problems in raising ducks.

10357

## SANITATION CONTROL (PESTS)

Recent techniques for serodiagnosis of hydatidosis. V. The importance of tests of bentonite, latex and indirect hemagglutination in the field sanitation of hidatidosis.

10372

## SAPERDA CARCHARIAS

An interesting case of adaptation to various hosts on the part of an egg parasite.

9985

## SARCOSOMES

The utilization of C14-labelled adenosine diphosphate during the in vitro respiration of housefly sarcosomes.

9984

## SATYRIDAE

*Cercyonis pegala abbotti*, new subspecies (Lepid., Satyridae).

9877

## SCARABAEIDAE

The structure of polymorphic species of the subgenus *Autolethrus* (Coleoptera, Scarabaeidae) from South Kazakhstan.

9924

Spiracles of adult Scarabaeoidea (Coleoptera) and their phylogenetic significance. I. The abdominal spiracles.

9934

Laboratory demonstration of a chemical sex attractant in *Costelytra zealandica* (White) (Scarabaeidae: Coleoptera).

10030

Fuseaux virus of a South American Scarabaeidae.

10133

## SCHISTOCERCA GREGARIA

Oviposition behaviour of the desert locust (*Schistocerca gregaria* Forsk.).

9971

Locust wind receptors. I. Transducer mechanics and sensory response.

9981

Locust wind receptors. III. Contribution to flight initiation and lift control.

9982

Locust wind receptors. II. Interneurons in the cervical connective.

9983

A study of a pocket of scattered desert locust population in Rajasthan, India during 1966 with special reference to eye-stripes and biometrics.

10027

Meteorological aspects of insect migrations.

10037

Common inhibitory motoneurons in insects.

10089

## SCHISTOSOMA MANSONI

Pyruvate kinase and phosphoenolpyruvate carboxykinase activities of *Ascaris muscle*, *Hymenolepis diminuta* and *Schistosoma mansoni*.

10369

## SCHISTOSOMIASIS

Schistosomal cirrhosis in pigs in Jabalpur, M. P.

10381

## SCORZONERA

Cytokinins and transfer ribonucleic acids. II. Presence of cytokinins in different amino-acid specific transfer ribonucleic acids of brewer's yeast as revealed by the growth response of tobacco-pith callus tissue and *Scorzonera* crown-gall tissue.

10439

## SCYMNUM

*Scymnus* (Sidis) *hickeyi* Fursch, as a foe of *Pseudococcus citri* Risso.

9893

## SEASONAL VARIATION

Butterflies of *Collobrieries*, var. *Alpes* Maures, Provence in July and August 1967.

9880

Seasonal evolution of the honey bee thermogenesis. Oxygen consumption of the isolated bee at five different temperatures in summer and in winter.

10123

Population genetics in the American tropics. IV. Temporal changes effected in natural populations of *Drosophila melanogaster* from Colombia.

10156

## SECRETION

On the odour components of the stink of two heteropter bug of India.

9989

Oenocytes: form and function.

10093

On the explosion chemistry of the bombardier beetle. VI. On the chemistry of the smallest bombardier beetle *Pausus faviieri*. XLIII. Communication on arthropod protective substances.

10111

## SEED DORMANCY

Seed dormancy and germination in ecotypes of *johnsongrass*.

10309

Effects of gibberellin A3 on fruit shape and subsequent seed dormancy of apple.

10453

## SEED GERMINATION

Studies on insect damage and germination of seeds. III. Germination of wheat jowar and maize seeds damaged by the developing grubs of *Sitophilus oryzae* L. and *Rhizopertha dominica* F..

10270

Seed dormancy and germination in ecotypes of *johnsongrass*.

10309

Photocontrol of rough cinquefoil seed germination and its enhancement by temperature manipulation and KNO3.

10451

## SEED TREATMENT

Chemotherapy of loose smut of barley in Canada.

10179

Chemical control of loose smut in barley.

10214

Seed treatment trial, 1967.

10229

Treatment of mustard and radish seeds for the control of mustard sawfly, *Athalia proxima* Klug, at seedling stage.

10251

Selective grass control with siduron.

10294



SEED-BORNE PLANT DISEASES

- Fungicidal control of rice diseases. 10170

SEEDLING BLIGHT

- Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223

SEEDLINGS

- Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223
- Comparison of mycelial and Sclerotial inoculum of *Macrophomina phaseoli* in the mortality of pine seedlings under varying soil conditions. 10225
- Effects of chlorpropham vapors on dodder seedlings. 10305
- Degradation of p32-bromophos by microorganisms and seedlings. 10449

SEEDS

- Toxic metabolite of *Aspergillus niger* and its role in onion rot disease. 10208
- Mercury-resistant *Pyrenophora avenae* in New Zealand seed oats: a comparison of six different compounds as seed disinfectants. 10223

SENSE ORGANS

- Locust wind receptors. I. Transducer mechanics and sensory response. 9981
- Locust wind receptors. III. Contribution to flight initiation and lift control. 9982
- Locust wind receptors. ii. Interneurones in the cervical connective. 9983
- A more recent sensillary type on the antenna of female mosquitoes (*Aedes aegypti* L.). 10055

SERODIAGNOSIS

- Study of densonucleosis of Lepidoptera by the immunological gel diffusion method. 10019
- Use of inert particles for the diagnosis of sheep cisticercosis. Bentonite test. 10367
- Recent techniques for serodiagnosis of hydatidosis. V. The importance of tests of bentonite, latex and indirect hemagglutination in the field sanitation of hidatidosis. 10372

SEROLOGICAL TESTS

- Control method of inactivated vaccines against the Newcastle disease by means of the titulation of neutralizing antibodies. 10334
- The isolation of a strain of *Leptospira*, serotype hardjo, from cattle in Queensland. 10358

SERUM

- Babesia argentina*: Serum changes in infected calves. 10345

SESONE

- Effects of several herbicides on yews and Japanese maples. 10280

SETARIA GLAUCA

- Yellow foxtail competition in grain sorghum. 10284

SEX

- Segregation distorter in *D. melanogaster* males: An effect of female genotype on the segregation ratio. 10155
- The role of sexuality in dosage compensation in *Drosophila*. 10162

SEX ATTRACTANTS

- Laboratory demonstration of a chemical sex attractant in *Costelytra zealandica* (White) (Scarabaeidae: Coleoptera). 10030

SEX BEHAVIOR

- Biology of the billbug *Sphenophorus venatus confluens*, a new pest of orchardgrass. 10047
- The predatory and reproductive behaviour of *Rhinocoris bicolor* and *R. tropicus* (Hemiptera: Reduviidae). 10085
- Damage to testes and recovery of fertility in boll weevils fed chemosterilants. 10100

SHADE TREES

- Progress report on shade tree inhibition. (abstract). 10442

SHEEP

- Incidence of bluetongue reported calendar year 1967. 10325
- An outbreak of vibriosis in sheep in New South Wales. 10351
- The incidence of demodectic mites in the eyelids of various mammalian hosts. 10363
- Use of inert particles for the diagnosis of sheep cisticercosis. Bentonite test. 10367

SIALIDAE

- Life history and habits of *Sialis rotunda* and *S. californica* in western Oregon. 9965

SIDURON

- Selective grass control with siduron. 10294

SILICA GELS

- Activation and standardization of purified silica gel for column chromatographic cleanup of pesticide residue extracts. 10414

SILVEX

- Extraction, separation, and GLC detection of silvex and its propylene glycol ether ester in fish tissue. 10421

SIMAZINE

- Effects of several herbicides on yews and Japanese maples. 10280
- Chemistry of fungicides. 10476

SIMULIIDAE

- New Simuliidae (Diptera) from New Caledonia and Norfolk Island. 9888
- The ecology of the Simuliidae in a Scottish river. 10062
- Homologous lines of chromosome polymorphism in the natural populations of Adirondack black fly (Diptera, Simuliidae). 10150

SINDBIS VIRUS

- Sindbis virus multiplication and *Calliphora erythrocephala* (Meig.) metamorphosis. 9969

SINIGRIN

- Discovery of sinigrin as a phagostimulant by *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 10433

SIPHONAPTERA

- Siphonaptera from Inari, Finland. 9942
- Abundance of cottontails and their fleas at Red Bluff Ranch, New Mexico. 10007

SITOPHILUS GRANARIUS

- The control of insects in bagged grain by the injection of dichlorvos. 10387

SITOPHILUS ORYZAE

- On the oviposition behaviour and development of *Sitophilus oryzae* Linn. in various natural foods. 10127

- A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhyzopertha dominica* (F.) in wheat. 10237

- Studies on insect damage and germination of seeds. III. Germination of wheat jowar and maize seeds damaged by the developing grubs of *Sitophilus oryzae* L. and *Rhyzopertha dominica* F.. 10270

SMUT

- Fungicidal control of smut diseases of cereals. 10207
- Seed treatment trial, 1967. 10229

SNAILS

- Use of metaldehyde as dusts and sprays to control the giant African snail *Achatina fulica* Bowdich. 10319
- Observations on the control of *Achatina fulica* Bowdich, the giant African snail with methldehyde. 10320
- Gulella (*Indocneca*) *bicolor* (Hutton), a predator of giant African snail *Achatina fulica* Bowdich. 10322

SODIUM CHLORATE

- Control of johnsongrass on drainage ditchbanks in sugarcane. 10297

SODIUM HYPOCHLORITE

- Treated water curbs tomato decay. 10384

SODIUM MONOCHLOROACETALDEHYDE BISULFITE

- Nematocides. Patent 3,457,353. 10271

SODIUM N-METHYLDITHIOCARBAMATE

- Chemistry of fungicides. 10476

SOGATELLA FURCIFERA

- Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234

SOIL CONTAMINATION

- Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395

SOIL INSECTS

- A simple collector for removing soil insects from an oil/water interface. 10095

SOIL LEACHING

- Leaching of the nuclear-polyhedrosis virus of *Trichoplusia ni* from soil. 10041
- Pesticides and clay minerals. 10397

SOIL MICROORGANISMS

- Behavior of pyrazon in soil. 10286
- Influence of pesticides on soil microbes and soil properties. 10400
- Survival of lyophilized *Bacillus popilliae* in soil. 10415
- Structure of pesticides and decomposition by soil microorganisms. 10427

SOIL MOISTURE

- Effect of soil water stress and soil temperature on translocation of diuron. 10302

SOIL PROFILES

- Atrazine degradation in two soil profiles. 10477

# SUBJECT INDEX

## SOIL PROPERTIES

### SOIL PROPERTIES

Influence of pesticides on soil microbes and soil properties.

10400

Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value.

10445

### SOIL SAMPLING

Seasonal changes in the distribution of the mite *Cylindroiulus punctatus* (Leach) in decaying logs and soil.

9966

Recovery of mites from peat and mineral soils using a new floatation method.

9975

### SOIL SANITATION

Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries.

10248

### SOIL TEMPERATURE

Effect of soil water stress and soil temperature on translocation of diuron.

10302

### SOIL TEXTURE

Pesticides and clay minerals.

10397

### SOILS

Laboratory evaluation of insecticides against white-fringed weevil (*Graphognathus leucoloma* (Boheman) (Coleoptera: Curculionidae)) larvae.

10131

Survival of root-infecting fungi in soil. XII. Germination and survival of endoconidia and chlamydospores of *Thielaviopsis basicola* in fallow soil and in soil adjacent to germinating bean seed.

10213

Movement of pesticides in the soil.

10398

Influence of pesticides on soil microbes and soil properties.

10400

The fate of phenyl N,N'-dimethylphosphor-diamidate in soil.

10401

Consequences of insecticide use of nontarget organisms.

10402

Industry's concern with pesticide residues.

10411

Extraction and gas-liquid chromatographic determination of vernolate in soil.

10412

Structure of pesticides and decomposition by soil microorganisms.

10427

Chemistry of herbicides.

10464

Extraction and gas-liquid chromatographic determination of vernolate in soil.

10467

Reactions of pesticides in soils.

10468

### SOLUBILITY

Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water.

10479

### SORGHUM

A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum.

10189

Influence of weed competition on sorghum growth.

10277

Yellow foxtail competition in grain sorghum.

10284

Tall waterhemp competition in grain sorghum.

10285

### SORGHUM HALEPENSE

Repeated, foliar applications of herbicides on johnsongrass.

10291

Translocation of assimilates and dalapon in established johnsongrass.

10292

Control of johnsongrass on drainage ditchbanks in sugarcane.

10297

Seed dormancy and germination in ecotypes of johnsongrass.

10309

### SORPTION

Water vapor sorption and humidity relationships in *Liposcelis* (Insecta: Psocoptera).

10053

### SOYBEANS

Response of soybeans to 2,4-D, dicamba, and picloram.

10312

Effects of high rates of trifluralin and vernolate on soybean yield and growth.

10317

### SPECTROMETRY

Analysis of multiple pesticide residues--chemical identity and confirmation of results.

10473

### SPECTROPHOTOMETRY

Behavior of pyrazon in soil.

10286

Determination and measurement of insecticide dust particles in atmospheres adjacent to orchards.

10399

Acetonitrile extraction and determination of carbaryl in fruits and vegetables.

10475

### SPERMATHECA

Proteins in the spermathecae and haemolymph of the queen bee (*Apis mellifica* L. var. *ligustica* Spin.).

10057

### SPERMATOCYTES

Spermatocyte granules in *Drosophila melanogaster*.

10003

Notes on the male germ cells of a beetle, *Lepidotarsa decemlineata*.

10115

### SPERMATOGENESIS

Comparison of effects of irradiation on the primary spermatogonia and mature sperm of three species of Diptera.

10102

Notes on the male germ cells of a beetle, *Lepidotarsa decemlineata*.

10115

### SPERMATOPHYTES

Spermatophytes of the Blattaria.

10024

### SPHENOPHORUS VENATUS CONFLUENS

Biology of the billbug *Sphenophorus venatus confluens*, a new pest of orchardgrass.

10047

### SPIRACLES

Spiracles of adult Scarabaeoidea (Coleoptera) and their phylogenetic significance. I. The abdominal spiracles.

9934

### SPIROCHETOSIS

Problems in raising ducks.

10357

### SPIRURIDAE

Spirurata of animals and humans and the diseases.

10382

### SPODOPTERA EXIGUA

Meteorological aspects of insect migrations.

10037

### SPORULATION

Influence of light on sporulation by *Helminthosporium stenospilum*.

10183

### SPRAYING

Growers join forces to battle the holl weevil.

10233

Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper.

10247

Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries.

10248

Easy-to-kill pests of fruit trees...codling moth.

10253

Control of *Brachyrhinus eribricollis* injuring ornamentals.

10269

A method for spraying individual trees.

10282

A sprayer for application of small amounts of herbicides to flats.

10314

Use of metaldehyde as dusts and sprays to control the giant African snail *Achatina fulica* Bowdich.

10319

The effect of N-dimethyl amino succinamic acid (Alar) on size, shape and maturity of Delicious apples.

10450

Spray gel agent solves drift problem.

10456

Insecticides, how to use them safely and effectively.

10466

### SPRAYING EQUIPMENT

Helicopter sprayers may rescue infested forests.

9959

### STAPHYLINIDAE

A new north Palearctic *Stenus*: *St. (Nestus) coriaceus* n. sp. (Coleoptera, Staphylinidae) (58. Contribution to the knowledge of the stenids).

9931

*Philonthus pareus* Sharp (Col., Staphylinidae) in Britain.

9945

*Hypocyrtus nitidus* Palm. (Col., Staphylinidae) in the Joy collection.

9954

*Quedius (Microsaurus) scitus* (Grav.) (Col., Staphylinidae) a teratological specimen.

9955

The insect predators of the pupal stage of the winter moth, *Operophtera brumata* (L.) (Lepidoptera: Hydriomenidae).

10009

The effect of pupal predators on a population of winter moth, *Operophtera brumata* (L.) (Hydriomenidae).

10010

### STAPHYLOCOCCUS AUREUS

Method for combating micro-organisms. Patent 3,458,636.

10362

Delayed lethal effect of 2,4-dichlorophenoxyacetic acid on bacteria.

10429

### STARVATION

Starvation-induced activity in cockroach malpighian tubules.

10073

Studies on lipid metabolism of *Ascaris* during starvation.

10368

### STATISTICAL ANALYSIS

Quantitative determination of uric acid in insect feces by lithium carbonate extraction and the enzymatic-spectrophotometric method.

9973

Experimental evidence for factors affecting the relative efficiency of indirect to direct selection in *Tribolium castaneum*.

10161

### STEMS

Verticillium wilt of tobacco. VI. The influence of roots and stems on *Verticillium* wilt symptoms in tobacco.

10186



# SUBJECT INDEX

## SURVEYS

### STEREUM PURPUREUM

Nutrition of the silver-leaf pathogen *Stereum purpureum* (Pers.) Fri.

10175

### STERILIZATION

New approaches to the control of pest organisms.

10118

### STEROLS

Sterol and water-soluble requirements for larvae of the red-banded leaf roller, *Argyrotaenia velutinana*.

10104

### STIMULANTS

Nutrition of *Xyleborus ferrugineus*. I. Ethanol in diets as a tunneling (feeding) stimulant.

10082

### STINKING SMUT

Seed treatment trial, 1967.

10229

### STOMACH

Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine.

10339

### STORAGE

Analysis of grain storage problems in India.

10390

### STORAGE DISEASES

Treated water curbs tomato decay.

10384

### STORED PRODUCT INSECTS

Analysis of grain storage problems in India.

10390

### STORED PRODUCTS

A key to the species of *Carcinops* Marscul (Coleoptera, Histeridae) associated with stored products, including *C. troglodytes* (Paykull) new to this habitat.

9901

The control of insects in bagged grain by the injection of dichlorvos.

10387

Observations on prolonged grain storage with forced aeration in Israel.

10389

Biological studies in Ghana in the control of *Cadra cautella* (Wlk.), the tropical warehouse moth.

10391

### STORED-PRODUCT INSECTS

Studies on the incidence and extent of damage due to insect pests in stored seeds--I. Cereal seeds.

10388

### STRANGLES (HORSES)

Equine vaccines and vaccinations.

10344

### STRAWBERRIES

In your garden - weeds: Robbers, but not always bad.

10168

Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries.

10248

### STREAMS

Aquatic insect communities of a small stream on Mont St. Hilaire, Quebec.

10060

### STRONGYLUS

The course of naturally acquired helminth infections of horses given regular anthelmintic treatment.

10380

### STRYCHNINE

Metabolism of strychnine nitrate applied for the control of the bear.

10318

### STUNT

Corn stunt vector leafhopper attractancy to and oviposition preference for hybrid dent corn. II. *Graminella nigrifrons*.

9992

### STYLOPIDAE

The effects of the removal of the parasite *Xenos* (Insecta Strepsiptera) on the protocerebral neurosecretion of its host *Polistes* (Hym. Vespidae).

10121

### SUBSTRATES

Substrate preferences and invasion behaviour exhibited by larvae of *Nilodorum brevibucca* Freeman (Chironomidae) under experimental conditions.

10066

### SUCCINIC ACID, 2,2-DIMETHYLHYDRAZIDE

The effect of N-dimethyl amino succinamic acid (Alar) on size, shape and maturity of Delicious apples.

10450

### SUGAR BEETS

Absorption and translocation of pyrazon by plants.

10287

Weed control in sugarbeets.

10296

### SUGARCANE

A new pyralid leaf roller, *Phostria* sp. on sugarcane.

10046

Local lesion host for grassy shoot virus of sugarcane.

10224

Contribution to the knowledge of the natural enemies of *Bissetia steniellus* (Hampson) (Lep.: Pyralidae).

10254

Control of johnsongrass on drainage ditchbanks in sugarcane.

10297

### SUGARS

Post-infection changes in the sugar content of leaf-spot infected barley.

10178

### SULFITES

Nematocides. Patent 3,457,353.

10271

### SULFUR

Surface hydrology and pesticides.

10392

### SULFUR DIOXIDE

Physiological and biochemical contribution to fume damage research. 8. Physiological investigations of the action of SO<sub>2</sub> on the metabolism of conifer needles in winter.

10432

### SURFACE-ACTIVE AGENTS

Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants.

10303

Bloat on *Dolichos lablab*.

10335

Treated water curbs tomato decay.

10384

### SURGERY

Dirofilaria immitis from the eye of a dog.

10376

### SURVEYS

Chloropidae (Diptera), unknown in the fauna of Bulgaria.

9871

The larvae of Odonata in the vascular territory of stagnant waters in Bulgaria.

9872

Yespidae from Bulgaria (Hymenoptera, Diplopoda).

9873

Revision of the Nearctic moth genus *Abagrotis* Smith with descriptions of new species (Lepidoptera: Noctuidae). Part VI The *duanea* and *placida* groups; checklist of the presently known species within the genus.

9879

Butterflies of *Collobrieries*, var. *Alpes Maures*, Provence in July and August 1967.

9880

A change in the Lepidoptera of Hampstead after four decades.

9881

Study of the world Gyponinae (Homoptera: Cicadellidae). A synopsis of the genus *Clinonaria*.

9883

A note: Some records of Australian Noctuidae in New Zealand.

9886

Results of an Austrian Lepidoptera collecting trip to Syria and Lebanon. (Part V.: Epermeniidae).

9894

The tiger moths of the county of Cumberland, New South Wales.

9900

A key to the species of *Carcinops* Marscul (Coleoptera, Histeridae) associated with stored products, including *C. troglodytes* (Paykull) new to this habitat.

9901

Mites of the super-family Gamasoidea on micromammalia in the western Balkan Range.

9911

Three new records of Bryobiinae from India (Acarina: Tetranychidae).

9921

Presentation of aquatic heteropteran fauna II, aquatic Heteroptera from Evora, Portugal.

9922

Bulgarian grasshoppers (Homoptera: Auchenorrhyncha).

9928

The butterflies of Lord Howe Island.

9929

First record of *Aewasius advena* Compere (Encyrtidae: Hymenoptera) from India as a parasite of *Ferrisia virgata* Ckll.

9932

New species and records of Nasutitermitinae (Isoptera: Termitidae) from Africa.

9936

Distribution and establishment of *Tetrastichus incertus* in the eastern United States.

9937

*Mordellistena pumila* group in Finland (Coleoptera, Mordellidae).

9941

Aphid fauna of Macedonia.

9943

Some new records of butterflies from Nepal.

9948

Several *Globiceps*-species (Heteroptera, Miridae).

9952

*Ixodes pacificus* Cooley and Kohls, 1943: Its life-history and occurrence.

9962

Pollens collected by species of *Andrena* (Hymenoptera: Apidae).

9986

Abundance of cottontails and their fleas at Red Bluff Ranch, New Mexico.

10007

Recent records of migrant Lepidoptera in Taranaki.

10008

Studies on the ecology of larval Tipulinae (Diptera, Tipulidae).

10011

Migrating butterflies in 1967 (Twentieth Annual Report).

10056

Aquatic insect communities of a small stream on Mont St. Hilaire, Quebec.

10060

New records of parasites of *Plutella maculipennis* Curt. in Gujarat, India.

10088

The epiphytotic of yellow orange leaf disease of rice in 1966 in Thailand.

10197

# SUBJECT INDEX

## SWEETPOTATOES

The presence of tristeza virus in certain species of citrus in Cyprus. 10212

Alternative host plants of tobacco leaf-miner (*Phthorimaea operculella* (Zell.)). 10239

Biochemical basis for plant competition. 10274

The relative incidence of *Vibrio fetus* infection in dairy and beef cattle in New South Wales. 10336

The occurrence of ephemeral fever of cattle in Victoria in 1968. 10347

An outbreak of vibriosis in sheep in New South Wales. 10351

Contribution to the research on the helminth fauna of wild birds in Thrace (southern Bulgaria) *Acaethoccephala*. 10371

Studies on the incidence and extent of damage due to insect pests in stored seeds--I. Cereal seeds. 10388

A survey of the chemical composition of *Potamogeton* and *Myriophyllum* in New Jersey. 10448

## SWEETPOTATOES

Metabolism of trifluralin in peanuts and sweet potatoes. 10273

Biochemical studies on the terpene metabolism in sweet potato root tissue with black rot. Effect of C10- and C15-terpenols on acetate-2-14C incorporation into ipomeamarone. 10446

## SWINE

*Toxoplasma gondii*: Isolation of samples starting from the diaphragms of clinically healthy pigs slaughtered in Sao Paulo, Brazil. 10327

Hog cholera and other communicable swine diseases. Miscellaneous amendments. 10328

Inactivated hog cholera virus vaccine. Patent 3,456,053. 10330

Foot lameness in pigs. 10332

Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine. 10339

Schistosomal cirrhosis in pigs in Jabalpur, M. P.. 10381

## SYMBIOSIS

Observations on the life history and bionomics of *Oligotoma ceylonica ceylonica* Enderlein (*Oligotomidae*, *Embioptera*), commensal in the nest of the social spider *Stegodyphus sarasinorum* Karsch. 9978

## SYMPHORICARPOS

Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants. 10303

## SYMPHYTA

New Bulgarian fauna of phytophagous wasps (*Symphyta*, *Hymenoptera*). 9946

## SYMPOSIA

Symposium on the principles of the application of microbiological preparations in nature. 10249

## SYNCHYTRIUM ENDOBIOTICUM

Elements for the differentiated application of quarantine and control measures of potato canker. 10221

## SYNERGISM

Biological interaction between plasticizers and insecticides. 10058

## SYNTHESIS

Studies on the biosynthesis of TMV. I. A system approaching a synchronized virus synthesis in a tobacco leaf. 10210

Conversion of heptachlor to its epoxide. 10478

## SYRPHIDAE

The effect of removal of arthropod predators on an infestation of *Brevicoryne brassicae* (*Hemiptera*, *Aphididae*) on brussels sprouts. 10260

## SYSTEMIC FUNGICIDES

Chemical control of loose smut in barley in Minnesota. 10174

Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium* wilt with Thiabendazole and Benlate. 10181

A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum. 10189

Control of loose smut of wheat and barley in Arkansas with fungicides. 10192

Chemical control of wheat and barley loose smut. 10194

Effect of two systemic fungicides on control of loose smut in wheat. 10195

Efficacy of oxathiin fungicides for control of loose smut in barley. 10199

Preliminary observations on the treatment of wheat and barley with a fungicide to control loose smut in England. 10200

Chemical control of loose smut in barley. 10214

Results obtained with a systemic oxathiin fungicide in France. 10220

The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl-4-oxathiin. 10222

Seed treatment trial, 1967. 10229

## T, 2,4,5-

Response of tropical vegetation to herbicides. 10275

Light intensity and the absorption and translocation of 2,4,5-T by woody plants. 10276

Effects of 2,4,5-T during the approach of woody plant dormancy. 10311

Growing Christmas trees on a power line right-of-way. 10485

## TABLES (DATA)

Designation used, chemical name, source, and trademark name of each fungicide mentioned in this compilation. 10172

Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395

## TACHINIDAE

Laboratory studies of *Eucelatoria armigera*, a tachinid parasite of *Heliothis* spp. 10040

## TAENIA HYDATIGENA

The effect of gastro-intestinal secretions on taeniid egg membranes. 10374

## TAENIA PISIFORMIS

The effect of gastro-intestinal secretions on taeniid egg membranes. 10374

## TAENIA SAGINATA

The effect of gastro-intestinal secretions on taeniid egg membranes. 10374

## TAPINOMA SESSILE

Odorous house ant feeds on photographic film. 10386

## TAXONOMY

Description, biology, and importance of a new species of *Allantonemmatidae* (*Nematoda*), parasite of the aphidiphagous *Coccinellidae*: *Parasitylenchus coccinellinae*, n. sp. 10039

*Heterobasidion annosum*. 10215

*Phellinus pomaceus*. 10217

*Inonotus hispidus*. 10218

Notes on Parasitology: (A). Canine hookworm (*Ancylostoma caninum* (Ercolani 1859, Hall, 1913) and (B) Canine coccidiosis (*Eimeria canis*, Wenyon 1923). 10366

Spirurata of animals and humans and the diseases. 10382

## TAXUS

Effects of several herbicides on yews and Japanese maples. 10280

## TDE

Comparison of ten methods for the analysis of milk for residues of chlorinated pesticides. 10470

## TEMIK

Rapid method for the extraction, cleanup, and GLC determination of toxic residues of temik. 10471

## TEMPERATURE

Effect of temperature on the development of mustard sawfly, *Athalia proxima* Klug. (*Hymenoptera*: *Tenthredinidae*). 9976

The external morphogenesis of grasshopper embryos. 9987

The influence of the rearing temperature on larval and pupal mortality and the duration of development of *Drosophila*. 9995

Effect of temperature on water absorption, development, and hatching in eggs of the prairie grain wireworm, *Ctenicera destructor*. 9999

The influence of ecological and genetic factors on the birth and death of *Macrocheles robustulus* (Berlese, 1904). 10005

Development of *Chrotogonus trachipterus* (Blanch.) (*Orthoptera*: *Pyrsgomorphidae*) in relation to different levels of temperature and humidity. 10026

The influence of temperature on reproduction and development in four species of *Glossina* (*Diptera*: *Muscidae*). 10028

Temperature effects on embryonic development in insects. 10035

Laboratory studies of *Eucelatoria armigera*, a tachinid parasite of *Heliothis* spp. 10040

Experimental studies on diapause in stoneflies. III. Eggs of *Brachyptera risi* (Morton). 10051

Puparial duration in *Glossina morsitans orientalis* under conditions of constant temperature. 10091

Letal temperatures for puparia of *Glossina morsitans orientalis*. 10092



- Seasonal evolution of the honey bee thermogenesis. Oxygen consumption of the isolated bee at five different temperatures in summer and in winter. 10123
- Experiments on larval diapause in the carahid *Pterostichus vulgaris* L. 10129
- Meiosis in the grasshopper: Chiasma frequency after elevated temperature and X-rays. 10151
- Biochemical basis for plant competition. 10274
- The response of fumitory to various herbicides. 10293
- Absorption and penetration of picloram in potato tuber discs. 10308
- Seed dormancy and germination in ecotypes of johnsongrass. 10309
- Problems in raising ducks. 10357
- Observations on prolonged grain storage with forced aeration in Israel. 10389
- Analysis of grain storage problems in India. 10390
- Photocontrol of rough cinquefoil seed germination and its enhancement by temperature manipulation and KNO<sub>3</sub>. 10451
- TENEbrio MOLITOR**  
Quantitative determination of uric acid in insect feces by lithium carbonate extraction and the enzymatic-spectrophotometric method. 9973
- A simple starch-gel electrophoretic method to investigate esterase inhibition by common organic insecticides. 10044
- Radiation sensitivity of twelve species of arthropods. 10069
- Isolation and biological properties of the juvenile hormone. 10106
- Spectral efficiency as function of latency in the visual mechanism of insect (*Tenebrio molitor* L.). 10142
- TENEbRIONIDAE**  
Notes on the natural history of Tenebrionidae (Coleoptera) in Canterbury. 10140
- TENEbROIDES MAURITANICUS**  
Quantitative determination of uric acid in insect feces by lithium carbonate extraction and the enzymatic-spectrophotometric method. 9973
- TENTHREDINIDAE**  
Effect of temperature on the development of mustard sawfly, *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 9976
- Discovery of sinigrin as a phagostimulant by *Athalia proxima* Klug. (Hymenoptera: Tenthredinidae). 10433
- TEPA**  
Mutagenic effects of TEPA and METEPA in mice. 10333
- TEPHROSIA VOGELII**  
Thin layer densitometric determination of rotenone and deguelin. 10461
- TERMITES**  
A new family Turanoniscidae fam. n. (Isopoda, Oniscoidea) from termitaria of Middle Asia. 9874
- New species and records of Nasutitermitinae (Isoptera: Termitidae) from Africa. 9936
- The neutral lipids from various organs of the termite *Macrotermes goliath*. 9991
- Antennopsis gallica* Heim and Buchli (hyphomycetes: Glocochaustoriales), an entomogenous fungus on subterranean termites in Florida. 10022
- Foraging galleries of the Formosan subterranean termite, *Coptotermes formosanus*, in Louisiana. 10052
- A new record, *Dorylus lhiatus* Shuck. (Hymenoptera: Formicidae) as a predator of *Microtermes mycophagus* Desn. (Isoptera: Termitidae). 10112
- On the effect of molds on various animal species. Part 2. 10343
- TESTES**  
Lactic dehydrogenase isozymes in the grasshopper. 9961
- Damage to testes and recovery of fertility in boll weevils fed chemosterilants. 10100
- The difference in sensitivity to the sterilizing action of O,O-diethyl-O-paranitrophenyl thiophosphate of the embryonic testicles of quails and chickens in vitro culture. 10430
- TETANUS**  
Equine vaccines and vaccinations. 10344
- TETRACYCLINE**  
Tetracycline antibiotic compositions for oral use. Patent 3,454,697. 10337
- TETRALONIA MINUTA**  
Biological notes on the bee *Tetralonia minuta* and its cleptoparasite, *Morgania histrio transvaalensis* (Hymenoptera: Anthophoridae). 10109
- TETRANYCHIDAE**  
Three new records of Bryobiinae from India (Acarina: Tetranychidae). 9921
- TETRANYCHUS URTICAE**  
Histological, behavioral, and symptomatic effects of Pentac on *Tetranychus urticae*. 10018
- Eyes of the female two-spotted spider mite, *Tetranychus urticae*. i. Morphology. 10067
- Toxicity of selected acaricides to susceptible and resistant strains of *Tetranychus urticae* Koch. 10128
- European red mite and two-spotted spider mite control on apples in California. 10236
- Organophosphorus acaricides for controlling the two-spotted spider mite on strawberries. 10248
- TETRASTICHUS**  
A comparative biological study of three ceroplastes species (Hem. Coccidae) and their natural enemies. 9990
- TETRASTICHUS INCERTUS**  
Distribution and establishment of *Tetrastichus incertus* in the eastern United States. 9937
- TETTIGONIIDAE**  
The Ephippigerinae (Orthoptera, Tettigoniidae) occasional but important predators of *Thaumetopoea pityocampa* Schiff. 9996
- THAUMETOPEINID CATERPILLAR**  
The Ephippigerinae (Orthoptera, Tettigoniidae) occasional but important predators of *Thaumetopoea pityocampa* Schiff. 9996
- THIAMINE**  
Nutrition of the silver-leaf pathogen *Stereum purpureum* (Pers.) Fri. 10175
- THIAZOLE**  
Chemical control of wheat and barley loose smut. 10194
- THIAZOLYL-BENZIMIDIZOLE, 2-(4-**  
Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium wilt* with Thiabendazole and Benlate. 10181
- The course of naturally acquired helminth infections of horses given regular anthelmintic treatment. 10380
- THIELAVIOPSIS BASICOLA**  
Survival of root-infecting fungi in soil. XII. Germination and survival of endoconidia and chlamydospores of *Thielaviopsis basicola* in fallow soil and in soil adjacent to germinating bean seed. 10213
- THIOCARBAMATES**  
Effectiveness of fungicides in controlling barley loose smut. 10196
- THIRAM**  
Seed-mycoflora of musk-melon. 10193
- Effectiveness of fungicides in controlling barley loose smut. 10196
- Chemical control of loose smut in barley. 10214
- THURICIDE**  
Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests. 10257
- THYSANOPTERA**  
On two new species of Terebrantian Thysanoptera with remarks on a new genus *Pellothrips*. 9958
- TIME**  
Relationship between amount of thinning, time of care, and damages caused by red deer. 10323
- TIPULIDAE**  
New species of crane flies from tropical America. V. (Diptera: Tipulidae). 9865
- New or little-known species of exotic Tipulidae (Diptera). XVI. 9866
- Studies on the ecology of larval Tipulinae (Diptera, Tipulidae). 10011
- TISSUE CULTURE**  
The utilization of C<sup>14</sup>-labelled adenosine diphosphate during the in vitro respiration of housefly sarcosomes. 9984
- Action of honey bee venom on development of epithelial cellular cultures of monkey's kidneys. 9997
- Vitellogenic blood protein synthesis by insect fat body. 10083
- Immunogenicity of concentrated and purified rabies vaccine of tissue culture origin. 10360
- The in vitro metabolism of organophosphorus insecticides by tissue homogenates from mammal and insect. 10426
- The difference in sensitivity to the sterilizing action of O,O-diethyl-O-paranitrophenyl thiophosphate of the embryonic testicles of quails and chickens in vitro culture. 10430
- Cytokinins and transfer ribonucleic acids. II. Presence of cytokinins in different amino-acid specific transfer ribonucleic acids of brewer's yeast as revealed by the growth response of tobacco-pith callus tissue and *Scorzonera* crown-gall tissue. 10439

# SUBJECT INDEX

## TISSUE EXTRACTS

### TISSUE EXTRACTS

Lactic dehydrogenase isozymes in the grasshopper.

9961

The in vitro metabolism of organophosphorus insecticides by tissue homogenates from mammal and insect.

10426

### TOBACCO

Interaction between chilli mosaic and powdery mildew in tobacco.

10176

Verticillium wilt of tobacco. VI. The influence of roots and stems on Verticillium wilt symptoms in tobacco.

10186

Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts.

10204

Translocation of tobacco ringspot virus in cucumber and zinnia.

10206

Studies on the biosynthesis of TMV. I. A system approaching a synchronized virus synthesis in a tobacco leaf.

10210

A necrotic type virus occurring on a weed in Germany.

10227

Verticillium wilt of tobacco. VIII. Movement of conidia of Verticillium dahliae Kleb. in tobacco plants.

10230

Verticillium wilt of tobacco. VII. Pathogenicity of isolates of Verticillium dahliae Kleb. on New Zealand tobacco.

10231

Distribution of larval and pupal instars of *Plusia argentifera* Guen. on tobacco plants.

10240

GLC determination of residues of disulfoton, oxydemetonmethyl, and their metabolites in tobacco plants.

10404

Cytokinins and transfer ribonucleic acids. II. Presence of cytokinins in different amino-acid specific transfer ribonucleic acids of brewer's yeast as revealed by the growth response of tobacco-pith callus tissue and *Scorzonera* crown-gall tissue.

10439

### TOBACCO MOSAIC VIRUS

Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts.

10204

Studies on the biosynthesis of TMV. I. A system approaching a synchronized virus synthesis in a tobacco leaf.

10210

On the inhibitory effect of yeast ribonucleic acid on the infection of *Nicotiana glutinosa* by tobacco mosaic virus.

10443

### TOLERANCES

Notice of filing of petition for food additives.

10417

### TOMATOES

A new tomato virus found in the Estonian SSR (*Aspermy-virus*).

10187

Phytotoxicity of bemethylated analogs of diphenamid.

10290

Effect of nitrogenous materials on the uptake of triazine herbicides.

10298

Treated water curbs tomato decay.

10384

### TOXICITY

Rubber-vine (*Cryptostegia grandiflora*) toxicity for ruminants.

10346

Specificity and mechanism in the action of saligenin cyclic phosphorus esters.

10424

Insecticides, how to use them safely and effectively.

10466

### TOXICOLOGY

Action of honey bee venom on development of epithelial cellular cultures of monkey's kidneys.

9997

Physico-organic chemical approach to the mode of action of organophosphorus insecticides.

10014

The toxicity to *Tribolium castaneum* (Herbst) (Coleoptera, Tenebrionidae) of mixtures of pyrethrins and piperonyl butoxide: Fitting a mathematical model.

10031

The artificial feeding of phosphamidon to *Myzus persicae*: ii. The effects of phosphamidon on liquid uptake through a parafilm membrane.

10086

Variability in insecticide tolerance of eighteen honey-bee colonies.

10125

Toxicity of selected acaricides to susceptible and resistant strains of *Tetranychus urticae* Koch.

10128

Toxicity of eight insecticides to the coccinellid predator *Chilomenes sexmaculata* Fabr..

10262

Metabolism of trifluralin in peanuts and sweet potatoes.

10273

Metabolism of organic pesticide chemicals in higher plants.

10278

Basis for selectivity of linuron on carrot and common ragweed.

10295

Mechanisms of action of herbicides.

10299

Absorption and penetration of picloram in potato tuber discs.

10308

Research on the effect of the entomophagous fungi *Beauveria bassiana* (bals.) Vuill. and *Metarrhizium anisopliae* (Metsch.) Sorok. on warm-blooded animals.

10353

Influence of pesticides on soil microbes and soil properties.

10400

Biodegradation of pesticides.

10422

Endrin induced alterations in bound carbohydrates in rat serum.

10423

Degradation and disappearance of ortho, para isomer of technical DDT in living and dead avian tissues.

10425

Delayed lethal effect of 2,4-dichlorophenoxyacetic acid on bacteria.

10429

Effect of dichloro diphenyl trichloro-ethane (DDT) on leghemoglobin content of root nodules of *Phaseolus aureus* (green gram).

10438

Physico-chemical and biophysical factors affecting the activity of pesticides.

10462

The insecticides; chemistry, mode of action, and toxicity.

10474

### TOXINS

Toxic metabolite of *Aspergillus niger* and its role in onion rot disease.

10208

Researches on *Galega* species regarding their content of toxins by means of biological methods. I. Toxicity of goats-rue (*Galega officinalis* L.) for warmblooded animals.

10428

### TOXOPLASMA GONDII

*Toxoplasma gondii*: Isolation of samples starting from the diaphragms of clinically healthy pigs slaughtered in Sao Paulo, Brazil.

10327

### TRADEMARKS

Designation used, chemical name, source, and trademark name of each fungicide mentioned in this compilation.

10172

### TRANSLOCATION

Light intensity and the absorption and translocation of 2,4,5-T by woody plants.

10276

Absorption and translocation of pyrazon by plants.

10287

Translocation of assimilates and dalapon in established johnsongrass.

10292

Effect of soil water stress and soil temperature on translocation of diuron.

10302

### TREE INJURIES

Relationship between amount of thinning, time of care, and damages caused by red deer.

10323

### TREES

Foraging galleries of the Formosan subterranean termite, *Coptotermes formosanus*, in Louisiana.

10052

*Phellinus igniarius*.

10216

*Inonotus hispidus*.

10218

A method for spraying individual trees.

10282

### TRIAZINES

Metabolism of organic pesticide chemicals in higher plants.

10278

Effect of nitrogenous materials on the uptake of triazine herbicides.

10298

Cell physiology investigations of the action of new triazine derivatives on petiole epidermis of *Solanum tuberosum* L.

10431

### TRIBOLIUM CASTANEUM

The toxicity to *Tribolium castaneum* (Herbst) (Coleoptera, Tenebrionidae) of mixtures of pyrethrins and piperonyl butoxide: Fitting a mathematical model.

10031

Age-distribution and abundance in populations of flour beetles. I. Experimental studies.

10071

Experimental evidence for factors affecting the relative efficiency of indirect to direct selection in *Tribolium castaneum*.

10161

### TRIBOLIUM CONFUSUM

Sensitivity to gamma radiation of *Tribolium confusum* eggs at various developmental stages.

10136

### TRICHLORFON

Studies on the susceptibility of different stages of *Bagrada cruciferarum* Kirkaldy to some organic insecticides.

10043

Variability in insecticide tolerance of eighteen honey-bee colonies.

10125

Biology and control of leopard moth on pear trees in the United Arab Republic.

10242

### TRICHLOROACETIC ACID

African feather grass--a weed worth watching.

10279

Weed control in sugarbeets.

10296

Control of johnsongrass on drainage ditchbanks in sugarcane.

10297



- TRICHLOROBENZOIC ACID, 2,3,6-**  
Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants. 10303
- TRICHOGRAMMATIDAE**  
Observations on the biology of *Lathromeroides* sp. (Trichogrammatidae: Hymenoptera) egg parasite of the leaf rolling weevil, *Apoderus sissu* Marshall (Curculionidae: Coleoptera) with notes on the host weevil. 10117
- TRICHOPLUSIA NI**  
Leaching of the nuclear-polyhedrosis virus of *Trichoplusia ni* from soil. 10041  
The histopathology of a nuclear polyhedrosis in larvae of the cabbage looper, *Trichoplusia ni*, related to symptoms and mortality. 10134  
Spray droplet size in the control of spruce budworm, boll weevil, bollworm and cabbage looper. 10247
- TRICHOPTERA**  
Caddis larvae. 9904
- TRIFLURALIN**  
Metabolism of trifluralin in peanuts and sweet potatoes. 10273  
Effects of several herbicides on yews and Japanese maples. 10280  
Effects of high rates of trifluralin and vernolate on soybean yield and growth. 10317  
An evaluation of herbicide incorporation equipment. 10483  
An evaluation of herbicide incorporation equipment. 10484
- TRIMEDLURE**  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032
- TRISTEZA**  
The presence of tristeza virus in certain species of citrus in Cyprus. 10212  
Evidence for restriction of a plant virus to phloem cells. 10219  
Efficiency of three colonies of melon aphids as transmitters of Tristeza virus. 10258
- TROGODERMA INCLUSUM**  
Sex attractant of female dermestid beetle *Trogoderma inclusum* Le Conte. 10105
- TROPICAL AGRICULTURE**  
Pesticide effect on phosphorus absorption from fertilizer-pesticide mixture applied to a tropical soil with low available phosphorus value. 10445
- TROPICAL PLANTS**  
Response of tropical vegetation to herbicides. 10275
- TROUT**  
Problems with DDT in fish culture operations. 10406  
Uptake of dieldrin by isolated perfused gills of rainbow trout. 10408
- TUBERCULOSIS**  
Medical and veterinary chemicals. Vol. I, parts I and II. 10355
- TUNGRO**  
Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234
- TURKEYS**  
The fine structure and method of feeding of the tissue parasitizing stages of *Histomonas meleagridis*. 10378  
Transmission of histomoniasis with male *Heterakis gallinarum* (Nematoda). 10383
- ULCERS**  
Foot lameness in pigs. 10332  
Survey of yeastlike fungi and tissue changes in esophagogastric region of stomachs of swine. 10339
- ULTRA-LOW-VOLUME SPRAYING**  
Growers join forces to hattle the boll weevil. 10233
- UREA**  
Effect of nitrogenous materials on the uptake of triazine herbicides. 10298
- UREA COMPOUNDS**  
Variations of the culture of *Fusarium moniliforme* induced by N-nitrosoethylurea and ethyl methanesulfonate. 10435  
Chemistry of herbicides. 10464
- URIC ACID**  
Quantitative determination of uric acid in insect feces by lithium carbonate extraction and the enzymatic-spectrophotometric method. 9973
- USTILAGO AVENAE**  
Results obtained with a systemic oxathiin fungicide in France. 10220
- USTILAGO NUDA**  
Control of barley loose smut in Wisconsin in 1966 and 1967. 10171  
Chemical control of loose smut in barley in Minnesota. 10174  
Effect of chemical treatments on the control of. 10191  
Efficacy of oxathiin fungicides for control of loose smut in barley. 10199  
Preliminary observations on the treatment of wheat and barley with a fungicide to control loose smut in England. 10200  
Results obtained with a systemic oxathiin fungicide in France. 10220  
The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl-4-oxathiin. 10222
- USTILAGO TRITICI**  
Preliminary observations on the treatment of wheat and barley with a fungicide to control loose smut in England. 10200  
The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl-4-oxathiin. 10222
- VACCINES**  
Equine vaccines and vaccinations. 10344
- VANESSA CARDUI**  
Susceptibility of several forest insects of British Columbia to commercially produced *Bacillus thuringiensis*. II. Laboratory and field pathogenicity tests. 10257
- VAPORS**  
Effects of chlorpropham vapors on dodder seedlings. 10305
- VECTORS**  
Rabies diagnosis. Observations on strains of virus with low pathogenicity. 10349
- VEGETABLES**  
Mediterranean fruit flies and melon flies trapped at various heights with synthetic lures. 10032  
Acetonitrile extraction and determination of carbaryl in fruits and vegetables. 10475
- VENTILATION**  
KCl-induced spreading depression and ventilation in the cockroach. 10108
- VERNOLATE**  
Extraction and gas-liquid chromatographic determination of vernolate in soil. 10412  
Release rates and herbicidal activity of slow release granular formulations. (abstract). 10459  
Extraction and gas-liquid chromatographic determination of vernolate in soil. 10467
- VERNONIA**  
Response of ironweed and buckbrush to herbicides and to herbicides in combinations with mowing, nitrogen fertilizer, and surfactants. 10303
- VERTICILLIUM**  
Methods of determination of the systemic and fungitoxic properties of chemicals applied to plants with emphasis on control of *Verticillium* wilt with Thiabendazole and Benlate. 10181
- VERTICILLIUM DAHLIAE**  
Verticillium wilt of tobacco. VI. The influence of roots and stems on *Verticillium* wilt symptoms in tobacco. 10186  
Verticillium wilt of tobacco. VIII. Movement of conidia of *Verticillium dahliae* Kleb. in tobacco plants. 10230  
Verticillium wilt of tobacco. VII. Pathogenicity of isolates of *Verticillium dahliae* Kleb. on New Zealand tobacco. 10231
- VESPIDAE**  
Vespidae from Bulgaria (Hymenoptera, Diptoptera). 9873
- VETERINARY MEDICINE**  
Medical and veterinary chemicals. Vol. I, parts I and II. 10355
- VIBRATION**  
Interaction between chronic irradiation, vibration, and centrifugation in the production of genetic effects in *Drosophila*. 10148  
Position effect on DNA transcription and replication. 10160
- VIBRIO FETUS**  
The relative incidence of *Vibrio fetus* infection in dairy and beef cattle in New South Wales. 10336
- VIBRIOSIS**  
An outbreak of vibriosis in sheep in New South Wales. 10351
- VIROLOGY**  
Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts. 10204  
Vaccinated cattle.....can harbor foot and mouth disease. 10331
- VIRUCIDES**  
Tablet dosage-form for the immunization of the intestinal tract with live virus preparations. Patent 3,458,621. 10359
- VIRULENCE**  
Rabies diagnosis. Observations on strains of virus with low pathogenicity. 10349

# SUBJECT INDEX

## VIRUS DISEASES (ANIMALS)

### VIRUS DISEASES (ANIMALS)

- Incidence of bluetongue reported calendar year 1967. 10325
- Vaccinated cattle.....can harbor foot and mouth disease. 10331
- The comparative pathology of duck plague in wild Anseriformes. 10342

### VIRUS DISEASES (PLANTS)

- Corn stunt vector leafhopper attractancy to and oviposition preference for hybrid dent corn. II. *Graminella nigrifrons*. 9992
- Interaction between chilli mosaic and powdery mildew in tobacco. 10176
- Studies on the infection of cucumber mosaic virus. V. the observation of epidermal cell in the local lesion. 10180
- Ir-2, a germ plasm bank of virus-free fruit tree clones. 10184
- A new tomato virus found in the Estonian SSR (*Aspermy-virus*). 10187
- The epiphytotic of yellow orange leaf disease of rice in 1966 in Thailand. 10197
- Effect of cytokinins on tobacco mosaic virus production in local-lesion and systemic hosts. 10204
- Translocation of tobacco ringspot virus in cucumber and zinnia. 10206
- Studies on the biosynthesis of TMV. I. A system approaching a synchronized virus synthesis in a tobacco leaf. 10210
- The presence of tristeza virus in certain species of citrus in Cyprus. 10212
- Evidence for restriction of a plant virus to phloem cells. 10219
- Local lesion host for grassy shoot virus of sugarcane. 10224
- A necrotic type virus occurring on a weed in Germany. 10227
- Response to parasites. 10232
- Common leafhopper-planthopper populations and incidence of tungro virus in diazinon-treated and untreated rice plots. 10234
- Comparative efficiency of transmission of aster yellows by *Elymana virescens* and *Macrostelus fascifrons* and the relative concentration of the causal agent in the vectors. 10238
- Efficiency of three colonies of melon aphids as transmitters of Tristeza virus. 10258

### VIRUSES

- Lethargy, a new virus of *Melolontha melolontha* L. larvae (Coleoptera, Scarabaeidae). 10036
- Changes in chromosomes induced by different DNA virus in cells of *Rhynchosciara angelae*. 10158
- Freeing alfalfa clones from alfalfa mosaic virus by heat treatment. 10185
- Medical and veterinary chemicals. Vol. I, parts I and II. 10355
- Tablet dosage-form for the immunization of the intestinal tract with live virus preparations. Patent 3,458,621. 10359

### VISION

- Spectral efficiency as function of latency in the visual mechanism of insect (*Tenebrio molitor* L.). 10142

### VITAMIN A

- Vitamin A metabolism in protein deficiency. 10324

### VITAMINS

- Sterol and water-soluble requirements for larvae of the red-banded leaf roller, *Argyrotaenia velutinana*. 10104

### VOLATILE SUBSTANCES

- Dioxane and dioxaspiro derivatives as attractants for male yellow-fever mosquitoes. 10023
- Volatile metabolites from dimethyldithiocarbamate fungicide residues. 10441

### WAREHOUSES

- Biological studies in Ghana in the control of *Cadra cautella* (Wlk.), the tropical warehouse moth. 10391

### WASTE DISPOSAL

- Movement of pesticides in the soil. 10398

### WATER

- Biochemical study of *Plodia interpunctella* (Hbn.) (Lepidoptera) I--Variations of body weight, water content, and dry matter content. 9993
- Effect of temperature on water absorption, development, and hatching in eggs of the prairie grain wireworm, *Ctenicera destructor*. 9999
- Water vapor sorption and humidity relationships in *Liposcelis* (Insecta: Psocoptera). 10053
- Water uptake and embryonic development in eggs of *Chorthippus brunneus* Thunberg (Saltatoria: Acrididae). 10079
- Yellow foxtail competition in grain sorghum. 10284
- Tall waterhemp competition in grain sorghum. 10285
- Potentials for removing pesticides from water. 10396
- Movement of pesticides in the soil. 10398
- Consequences of insecticide use of nontarget organisms. 10402
- Competition between flax and wild huckwheat. 10440
- Gas chromatographic characteristics of chlordane. I. Effect of an aqueous environment on the heptachlor component. 10458
- Distribution ratio of some chlorinated hydrocarbon insecticides between hexane and water. 10479

### WATER ANALYSIS

- Water florae as indicators of irrigation water contamination by DDT. 10403

### WATER POLLUTION

- Surface hydrology and pesticides. 10392
- Research on pollution of crops, soil and shallow bodies of water in Liguria, through residues of some organochlorinated pesticides. 10395
- Potentials for removing pesticides from water. 10396
- Water florae as indicators of irrigation water contamination by DDT. 10403

### WATER TREATMENT

- Treated water curbs tomato decay. 10384

- Potentials for removing pesticides from water. 10396

### WEED CONTROL

- A method for spraying individual trees. 10282
- Downy brome control by soil-active herbicides for revegetation of rangelands. 10283
- Repeated, foliar applications of herbicides on johnsongrass. 10291
- The response of fumitory to various herbicides. 10293
- Selective grass control with siduron. 10294
- Control of johnsongrass on drainage ditchbanks in sugarcane. 10297
- Reaction of flax to dicamba applied at several stages. 10301
- Effects of chlorpropham vapors on dodder seedlings. 10305
- Effects of growth regulators and herbicides on germination of *Hydrilla* turions. 10306
- Control of green rabbitbrush and big sagebrush with 2,4-D and picloram. 10310
- An evaluation of herbicide incorporation equipment. 10484

### WEEDS

- In your garden - weeds: Robbers, but not always bad. 10168
- A necrotic type virus occurring on a weed in Germany. 10227
- Biochemical basis for plant competition. 10274
- Influence of weed competition on sorghum growth. 10277
- African feather grass--a weed worth watching. 10279
- Yellow foxtail competition in grain sorghum. 10284
- Tall waterhemp competition in grain sorghum. 10285
- Effects of growth regulators and herbicides on germination of *Hydrilla* turions. 10306
- Seed dormancy and germination in ecotypes of johnsongrass. 10309
- Rubber-vine (*Cryptostegia grandiflora*) toxicity for ruminants. 10346
- Competition between flax and wild buckwheat. 10440
- A survey of the chemical composition of *Potamogeton* and *Myriophyllum* in New Jersey. 10448

### WHEAT

- Further records of the distribution of *Petrobia latens* (Muller) (Acarina: Tetranychidae), a pest of wheat in India together with the description of a new species of predatory mites on the same. 9920
- A systemic oxathiin fungicide to control loose smuts, covering smuts, seed rots, and seedling blights of wheat, barley, oats, and sorghum. 10189
- Control of loose smut of wheat and barley in Arkansas with fungicides. 10192
- Chemical control of wheat and barley loose smut. 10194



- Effect of two systemic fungicides on control of loose smut in wheat. 10195
- Preliminary observations on the treatment of wheat and barley with a fungicide to control loose smut in England. 10200
- Breeding for rust resistance. Advances in genetics give hope for total immunity. 10211
- The systemic fungicide 2,3-dihydro-5-carbox-anilido-6-methyl-4-oxathiin. 10222
- Preliminary note on the occurrence of black point disease of wheat in India. 10228
- Seed treatment trial, 1967. 10229
- The biology, mode of attack and damage caused by the thrips, (*Haplothrips tritici* Kurd) to wheat crops. 10235
- A comparison of malathion, diazinon, fenitrothion and dichlorvos for control of *Sitophilus oryzae* (L.) and *Rhizopertha dominica* (F.) in wheat. 10237
- Atherigona* sp. (Anthomyiidae: Diptera) as a pest of wheat in Rajasthan. 10250
- Studies on insect damage and germination of seeds. III. Germination of wheat jowar and maize seeds damaged by the developing grubs of *Sitophilus oryzae* L. and *Rhizopertha dominica* F.. 10270
- Effect of soil water stress and soil temperature on translocation of diuron. 10302
- Observations on prolonged grain storage with forced aeration in Israel. 10389
- WILDLIFE**
- Consequences of insecticide use of nontarget organisms. 10402
- WILDLIFE DISEASES**
- The comparative pathology of duck plague in wild Anseriformes. 10342
- WILT**
- Verticillium wilt of tobacco. VI. The influence of roots and stems on Verticillium wilt symptoms in tobacco. 10186
- Verticillium wilt of tobacco. VIII. Movement of conidia of Verticillium dahliae Kleb. in tobacco plants. 10230
- Verticillium wilt of tobacco. VII. Pathogenicity of isolates of Verticillium dahliae Kleb. on New Zealand tobacco. 10231
- WIND**
- Locust wind receptors. I. Transducer mechanics and sensory response. 9981
- Locust wind receptors. ii. Interneurons in the cervical connective. 9983
- WIND DISPERSAL**
- Ochromolopis icetella Hb. (Lepidoptera, Epermeniidae) in Finland, probably transported by windstorm. 9912
- X-RAYS**
- Comparison of effects of irradiation on the primary spermatogonia and mature sperm of three species of Diptera. 10102
- Meiosis in the grasshopper: Chiasma frequency after elevated temperature and X-rays. 10151
- XANTHOMONAS ORYZAE**
- Fungicidal control of rice diseases. 10170
- XIPHINEMA AMERICANUM**
- Translocation of tobacco ringspot virus in cucumber and zinnia. 10206
- XYLEBORUS FERRUGINEUS**
- Nutrition of Xyleborus ferrugineus. I. Ethanol in diets as a tunneling (feeding) stimulant. 10082
- YEASTS**
- Cytokinins and transfer ribonucleic acids. II. Presence of cytokinins in different amino-acid specific transfer ribonucleic acids of brewer's yeast as revealed by the growth response of tobacco-pith callus tissue and Scorzoneria crown-gall tissue. 10439
- On the inhibitory effect of yeast ribonucleic acid on the infection of Nicotiana glutinosa by tobacco mosaic virus. 10443
- YELLOW**
- Comparative efficiency of transmission of aster yellows by Elymana virescens and Macrosteles fascifrons and the relative concentration of the causal agent in the vectors. 10238
- ZEUZERA PYRINA**
- Biology and control of leopard moth on pear trees in the United Arab Republic. 10242
- ZINC**
- Effect of CL-50, a new synthetic fungicide on certain fungi. 10173
- ZINC DITHIOCARBAZATE**
- Fungicidal composition containing zinc dithiocarbamate. Patent 3,458,638. 10190
- ZOOGEOGRAPHY**
- New species of crane flies from tropical America. V. (Diptera: Tipulidae). 9865
- A new sub-genus and species of the Eumeninae (Hymenoptera, Diptera) from the Bulgarian fauna. 9868
- New species of Chrysobothris from the Pacific Northwest (Coleoptera: Buprestidae). 9870
- The larvae of Odonata in the vascular territory of stagnant waters in Bulgaria. 9872
- The identification and distribution of Quadraspidiotus species (Homoptera: Diaspididae) on pome and stone fruits in Australia. 9876
- Revision of the Nearctic moth genus Abagrotis Smith with descriptions of new species (Lepidoptera: Noctuidae). Part VI The duaneae and placida groups; checklist of the presently known species within the genus. 9879
- Study of the world Gyponinae (Homoptera: Cicadellidae). A synopsis of the genus Clinonaria. 9883
- Two new Palearctic Lithocolletis species. (Preliminary description). 9884
- Description of Dendrococcus (tmaecrostigma) noumcae sp. nov. from New Caledonia (Ceraphronoidea, Megaspilidae). 9885
- Contribution to the knowledge of the Staphylinidae. CI. Diverse remarks on some Quedius from the eastern Mediterranean. 9890
- Oriental species of Coesula Cameron (Hymenoptera: Ichneumonidae). 9897
- The subgenus Persicargas (Ixodoidea, Argasidae, Argas). 7. A. (P.) walkerae, new species, a parasite of domestic fowl in southern Africa. 9908
- A revision of the pseudomorphacridini (Orthoptera: Acridoidea: Pyrgomorphidae). 9909
- A new species of Ficalbia (Ravenalites) from Cambodia (Diptera: Culicidae). 9910
- Amphipyra pyramidea L. and A. berbera Rungs in Finland (Lepidoptera, Noctuidae). 9913
- New Mymaridae from Central Africa. (Hymenoptera: Chalcidoidea). 9916
- The genus Heteroconis Enderlein, 1905 (Neuroptera, Coniopterygidae). 9919
- Further records of the distribution of Petrobia latens (Muller) (Acarina: Tetranychidae), a pest of wheat in India together with the description of a new species of predatory mites on the same. 9920
- New species and records of Nasutitermitinae (Isoptera: Termitidae) from Africa. 9936
- Distribution and establishment of Tetrastichus incertus in the eastern United States. 9937
- Mordellistena pumila group in Finland (Coleoptera, Mordellidae). 9941
- New Bulgarian fauna of phytophagous wasps (Symphyta, Hymenoptera). 9946
- Some new records of butterflies from Nepal. 9948
- Adelphocoris minor nov. spec. (Heteroptera, Miridae). 9949
- Additions to the genus Alloconotus Fieber, 1878 (Heteroptera, Miridae). 9950
- New Orthotylus and Pachylops species (Heteroptera, Miridae). 9951
- On two new species of Terebrantian Thysanoptera with remarks on a new genus Pellothrips. 9958
- Ixodes pacificus Cooley and Kohls, 1943: Its life-history and occurrence. 9962
- Laboratory studies of Eucelatoria armigera, a tachinid parasite of Heliothis spp. 10040
- Insect parasites of the green peach aphid, Myzus persicae Sulz. and their control potential. 10059
- Eretmocerus corni Hald. (Hym., Aphelinidae), a parasite of Siphoninus phillyrae Halid. (Hom., Aleyrodidae). 10070
- New records of parasites of Plutella maculipennis Curt. in Gujarat, India. 10088
- A supplementary list of the host-plants of lace insects. 10135
- Etology as the determining factor of the numerical distribution of the species in the fauna. 10144
- A new species of Aedes (Stegomyia) from Thailand (Diptera: Culicidae). 10164
- Elements for the differentiated application of quarantine and control measures of potato canker. 10221
- A review of the use of insecticides on the main agricultural crops of the world--3. Section 3: Cotton. 10245

# SUBJECT INDEX

## ZOOGEOGRAPHY

Atherigona sp. (Anthomyiidae: Diptera) as a pest of wheat in Rajasthan.

10250

Needle miner infestations in lodgepole pine east of the Sierra crest.

10267

Gulella (Indoennea) bicolor (Hutton), a predator of giant African snail Achatina fulica Bowdich.

10322

Contribution to the research on the helminth fauna of wild birds in Thrace (southern Bulgaria) Acathocephala.

10371

Wharf borer.

10385



# BIOGRAPHICAL INDEX

- Abeygunawardena, D V W**  
Ceylon. central Agricultural Research Institute,  
10170
- Ahrens, R W**  
Wisconsin Univ., Madison; Dept. of Plant Pathology  
10171
- Alexander, C P**  
Massachusetts. university  
9865
- Alexander, C P**  
Massachusetts. university  
9866
- Alexander, M**  
Cornell University, Ithaca, N. Y.; New York State College of Agriculture; Dept. of Agronomy  
10422
- Amhril, V do**  
Sao Paulo. instituto Biologico; Seccao de Parasitologia Animal  
10327
- Ananthakrishnan, T N**  
Loyola College, Madras, India; Dept. of Zoology  
9867
- Ananthakrishnan, T N**  
Loyola College, Madras, India; Dept. of Zoology  
9958
- Anderson, R J**  
Agricultural Research Service, Washington, D. C.  
10328
- Arnett, H J**  
Texas. university; Cell Research Institute, Austin  
9960
- Aronson, J N**  
New York State Univ., Albany; Depts. of Chemistry and Biological Sciences  
9961
- Arthur, D R**  
London. university King's College; Dept. of Zoology and Animal Biology  
9962
- Ashrafi, S H**  
Pakistan Council of Scientific and Industrial Research; Karachi; Central Lab.  
10173
- Atchley, W R**  
Kansas. university; Dept. of Entomology  
9963
- Atienza Fernandez, M**  
Spain. consejo Superior de Investigaciones Cientificas; Instituto 'Lopez-Neyra' de Parasitologia; Seccion de Immunologia  
10367
- Avidov, Z**  
Hebrew University; Faculty of Agriculture, Rehovot  
9964
- Ayala, F J**  
Rockefeller University, New York (city)  
10146
- Azam, K M**  
Hyderabad, 17-8-593, Chanchalguda, India  
9965
- Bae, S H**  
Office of Rural Development (Suwon); Dept. of Entomology  
10234
- Balfour-Browne, J**  
British Museum (Natural History)  
9869
- Ball, B D**  
Dept. of Agriculture, Michigan  
10167
- Baloch, G M**  
Commonwealth Institute of Biological Control; Pakistan Station  
10272
- Banerjee, B**  
India. tocklai Experimental Station, Cinnamara  
9966
- Banita, E**  
Statiunea experimentală agricolă Simnic, Craiova, Romania  
10235
- Bantari, E E**  
Minnesota Univ., St. Paul; Dept. of Plant Pathology  
10174
- Barr, W F**  
Idaho. University; Dept. of Entomology  
9870
- Barthel, W F**  
U. S. Dept. of Agriculture, Gulfport, Miss.; Agricultural Research Service; Plant Pest Control Division  
10392
- Bazzi, B**  
Montecatini Edison S.p.A, Milan, Italy; Istituto Ricerche Agrarie  
10457
- Beames, C G**  
North Dakota State Univ., Fargo; Dept. of Zoology  
10368
- Beever, D J**  
New Zealand. dept. of Scientific and Industrial Research; Plant Diseases Division, Auckland  
10175
- Benassy, C**  
France. station de Recherches de lutte biologique et; de Zoologie agricole, Antibes  
9967
- Bentley, D R**  
California Univ., Berkeley; Dept. of Zoology  
9968
- Berkaloff, A**  
Faculte des Sciences, Orsay. France; Lab. de Biologie cellulaire III  
9969
- Betbeder-Natibet, M**  
Madagascar. institut de Recherches Agronomiques de la Republique Malagache, Tananarive; Division d'Entomologie  
9970
- Bevenue, A**  
Hawaii. university; Dept. of Agricultural Biochemistry  
10458
- Bhatia, K R**  
India. field Station for Investigations on Locusts; Bikaner  
9971
- Bhatia, S S**  
Poona. university; Dept. of Zoology  
9972
- Bhattacharya, A K**  
Illinois. university; Dept. of Entomology  
9973
- Bishop, J B**  
Louisiana State Univ., Baton Rouge; Dept. of Zoology  
10147
- Bisht, D S**  
Indian Agricultural Research Institute; Division of Entomology, Delhi  
9974
- Biswas, P K**  
Carver Research Foundation, Ala.  
10273
- Black, C C**  
Georgia. university; Dept. of Biochemistry  
10274
- Block, W**  
Cambridge. university; School of Agriculture, England  
9975
- Bode, L E**  
Missouri. University, Columbia; Dept. of Agricultural Engineering; Weed Control Machinery Project  
10484
- Bogawat, J K**  
Udipur University. agricultural Experiment Station; Dept. of Entomology  
9976
- Bogawat, J K**  
Udaipur University. agricultural Experiment Station; Dept. of Entomology  
10433
- Borutzky, E V**  
Moscow. state University; Zoological Museum  
9874
- Boursin, C**  
11 Rue des Ecoles, Paris (5e), France  
9875
- Boursin, C**  
11 Rue des Ecoles, Paris (5e), France  
9977
- Bovey, R W**  
U. S. dept. of Agriculture, agricultural Research Service; Crops Research Division, Mayaguez  
10275
- Bowman, M C**  
U. S. Agricultural Research Service, Tifton; Entomology Research Division  
10404
- Brady, H A**  
U. S. dept. of Agriculture. southern Forest Experiment; Station; Alexandria Timber Management Research Project, La.  
10276
- Brewerton, H V**  
New Zealand. dept. of Scientific and Industrial Research; Chemistry Division, Wellington  
10405
- Brookes, H M**  
Australia. waite Agricultural Research Institute, Glen; Glen Osmond  
9876
- Brown, F M**  
Fountain Valley School, Colorado Springs  
9877
- Brown, L R**  
California. university; Dept. of Entomology  
10386
- Browning, L S**  
St. Thomas Univ. houston, Tex.  
10148
- Buck, F D**  
Colchester, New Road, England  
9878
- Buck, F D**  
Colchester, New Road, England  
9979
- Buckett, J S**  
California. dept. of Agriculture; Bureau of Entomology, Sacramento  
9879
- Bueding, E**  
Johns Hopkins Univ., Baltimore, Md.; Dept. of Pathobiology  
10369
- Burnside, O C**  
Nebraska. university; Dept. of Agronomy  
10277
- Butterworth, P E**  
Massachusetts. University; Dept. of Zoology  
10370
- Cadahia, D**  
Antibes. institut National de la Recherche Agronomique; Station de Recherches de Lutte biologique  
9980
- Calderara, P**  
Barnet, 26 Manor Road, England  
9880
- Calvo, J M**  
Cornell University; Dept. of Biochemistry and Molecular Biology, Ithaca, N. Y.  
10329
- Camhi, J M**  
Cornell University; Division of Biological Sciences; Section of Neurobiology and Behavior  
9981
- Camhi, J M**  
Cornell University; Division of Biological Sciences; Section of Neurobiology and Behavior  
9982
- Camhi, J M**  
Cornell University; Division of Biological Sciences; Section of Neurobiology and Behavior  
9983
- Carney, G C**  
Bowling Green University; Dept. of Biology, Ohio  
9984
- Carter, C I**  
Alton, 6 The Ridgeway, England  
9881
- Casida, J E**  
California. university; Division of Entomology, Berkeley  
10278
- Castro, J G**  
Instituto Lopez-Neyra de Parasitologia, Argentina; Seccion de Immunoparasitologia  
10372
- Cavalcaselle, B**  
Italy. centro di Sperimentazione Agricola e Forestale; Rome  
9985

# BIOGRAPHICAL INDEX

**Chadha, K C**

**Chadha, K C**  
Indian Agricultural Research Institute; Division of  
Mycology and Plant Pathology, New Delhi  
10176

**Chambers, V H**  
Hertfordshire, 12 Douglas Road, London  
9986

**Champ, B R**  
Australia. dept. of Primary Industries; Entomology  
Laboratory, Indooroopilly  
10237

**Chand, J N**  
Punjab. agricultural University; Dept. of Botany  
and Plant Pathology  
10177

**Chapman, R F**  
Birkbeck College; Dept. of Zoology, London  
9987

**Chatterji, S M**  
Indian Agricultural Research Institute; Division of  
Entomology, New Delhi  
9988

**Choudhuri, D K**  
Burduan. university; Dept. of Zoology  
9989

**Chubareva, I. A**  
Academy of Sciences of the USSR, Leningrad;  
Lab. for Karyosystematics and Population Genetics  
10150

**Church, K**  
Oregon. university; Dept. of Biology, Eugene  
10151

**Cmelik, S H W**  
Rhodesia. university College; Dept. of Biochemis-  
try  
9991

**Colby, S R**  
University of Maryland, College Park; Agronomy  
Dept.  
10459

**Coleman, R L**  
Oklahoma. university. school of Health; Depts. of  
Environmental Health and Biochemistry  
10423

**Collins, H I**  
Mississippi. state University; Dept. of Entomology  
9992

**Collins, J F**  
Bethesda. national Institutes of Health; Laboratory  
of Molecular Biology  
10152

**Couture, G**  
Laval. universite; Dept. de Biologie  
9993

**Crompton, D W T**  
Cambridge. university; Molteno Institute  
10373

**Crumpacker, D W**  
Colorado. university; Dept. of Biology  
10153

**Cuerrier, J P**  
Canadian Wildlife Service, Ottawa  
10406

**Cunningham, I C**  
Queensland. dept. of Primary Industries; En-  
tomology Section, Mareeba  
10239

**Cunningham, I C**  
Queensland. dept. of Primary Industries; En-  
tomology Section, Mareeba  
10240

**Dang, K**  
Indian Agricultural Research Institute; Division of  
Entomology, New Delhi  
9994

**Danielson, L L**  
U. S. dept. of Agriculture. agricultural Research  
Service; Crops Research Division, Beltsville  
10280

**David, J**  
Faculte des Sciences; Laboratoire de Zoologie  
General, Lyon, France  
9995

**Davies, T H**  
Clifton, R. D. 2, New Zealand  
9882

**Davis, D G**  
Wisconsin. university; Dept. of Medical Genetics,  
Madison  
10154

**Dayal, R**  
Banaras. hindu University; Dept. of Plant Patholo-  
gy  
10178

**DeBaca, P**  
California. university. agricultural Experimenta-  
tion; Riverside  
10241

**Delfel, N E**  
U. S. Agricultural Research Service, Peoria;  
Northern Regional Research Laboratory  
10461

**DeLong, D M**  
Ohio. state University  
9883

**Demolin, G**  
Antihes. institut National de la Recherche  
Agronomique; Station de Recherches de Lutte  
hiologique  
9996

**Denell, R E**  
Texas Univ., Austin  
10155

**Derevici, A**  
Institut Docteur Cantacuzino, Bucharest, Rumania  
9997

**Deschka, G**  
Steyr, Josef Ressel-Strasse, Austria  
9884

**Dessart, P**  
Brussels. institut royal des Sciences naturelles de;  
Belgique; Section d'Entomologie  
9885

**Dharmaraju, E**  
Andhra Pradesh. agricultural University  
9998

**Doane, J F**  
Canada. dept. of Agriculture; Research Station,  
Saskatoon  
9999

**Dowler, C C**  
U. S. dept. of Agriculture. agricultural Research  
Service; Crops Research Division, Mayaguez.  
10282

**Drooz, A T**  
U. S. dept. of Agriculture. forest Service;  
Southeastern Forest Experiment Station; Research  
Triangle Park, N. C.  
10000

**Dugdale, J S**  
New Zealand. Dept. of Scientific and Industrial  
Research; Entomology Division  
9886

**Dumbleton, I. J**  
New Zealand. dept. of Scientific and Industrial  
Research; Entomology Division  
9887

**Dumbleton, I. J**  
New Zealand. dept. of Scientific and Industrial;  
Research; Entomology Division, Christchurch  
9888

**Dustman, E H**  
Patuxent Wildlife Research Center, Laurel, Md.;  
Bureau of Sport Fisheries and Wildlife; U. S. Fish  
and Wildlife Service  
10407

**Ebert, E**  
Geigy, J. R., S. A., Basel, Switzerland  
10434

**Edgington, I. V**  
Dept. of Botany  
10179

**Ehara, Y**  
Tohoku University; Lab. of Phytopathology  
10180

**Eichlin, T D**  
Auburn. university; Dept. of Zoology-entomology,  
Ala.  
9889

**Eldcfrawi, M E**  
Alexandria. university. college of Agriculture;  
Dept. of Plant Protection  
10242

**Elliott, J M**  
Freshwater Biological Association, Ambleside, En-  
gland  
10001

**Elser, H J**  
Dept. of Chesapeake Bay Affairs, Annapolis, Md.  
10393

**Endrody-Younga,**  
Crops Research Inst., Kumasi, Ghana; Entomology  
Section  
10243

**Engelmann, F**  
California. university; Dept. of Zoology, Los An-  
geles  
10002

**Epstein, S S**  
Children's Cancer Research Foundation, Inc,  
Boston, Mass.  
10333

**Erickson, J**  
Western Washington. state College; Dept. of Biolo-  
gy, Bellingham  
10003

**Erokhina, L I**  
Kurchatov Inst. of Atomic Energy, Moscow, USSR  
10435

**Erwin, D C**  
California. university; Dept. of Plant Pathology,  
Riverside  
10181

**Erwin, D C**  
California. university; Dept. of Plant Pathology,  
Riverside  
10244

**Erwin, D C**  
California. university; Dept. of Plant Pathology,  
Riverside  
10394

**Erwin, D C**  
California. university; Dept. of Plant Pathology,  
Riverside  
10436

**Eto, M**  
Kyushu Univ., Fukuoka, Japan; Dept. of Agricul-  
tural Chemistry  
10424

**Evans, R A**  
U. S. dept. of Agriculture. agricultural Research  
Service; Crops Research Division, Reno, Nev.  
10283

**Fagel, G**  
Institut royal des Sciences naturelles, Brussels,;  
Belgium  
9890

**Feltner, K C**  
Kansas. state University; Dept. of Agronomy  
10284

**Feltner, K C**  
Kansas. state University; Dept. of Agronomy  
10285

**Ferrari, P**  
Australia. commonwealth Scientific and Industrial  
Research; Organization; Division of Entomology,  
Townsville  
10004

**Filipponi, A**  
Rome. istituto Superiore di Sanita; Laboratori di  
Parassitologia,  
10005

**Flanders, S E**  
California. university; Citrus Research Center,  
Riverside  
10006

**Fleck, E E**  
U. S. Dept. of Agriculture, Beltsville, Md.; En-  
tomology Research Division; Pesticide Chemicals  
Research Branch  
10463

**Fonseca, J P de**  
Sao Paulo. instito Biologico ;; Seccao de  
Parasitologia Vegetal  
9892

**Forcom, D L**  
New Mexico. Health and Social Services Dept.;  
General Sanitation Section  
10007

**Fox, K J**  
Manaia, Box 23, New Zealand  
10008

**Frank, J H**  
Alberta. university; Dept. of Entomology, Canada  
10009



## BIOGRAPHICAL INDEX

Hurpin, B

- Frank, J H**  
Alberta. university, Edmonston; Dept. of Entomology  
10010
- Frank, R**  
Ontario. dept. of Agriculture and Food; Provincial Pesticide Residue Testing Laboratory, Canada  
10286
- Frank, R**  
Ontario. dept. of Agriculture and Food; Provincial Pesticide Residue Testing Laboratory  
10287
- Frank, R**  
Ontario. dept. of Agriculture and Food; Provincial Pesticide Residue Testing Laboratory, Canada  
10288
- Freed, V H**  
Oregon State University, Corvallis; Dept. of Agricultural Chemistry  
10464
- Freeman, B E**  
London. university; Wye College  
10011
- Freeman, T E**  
University of Florida, Gainesville; U. S. Dept. of Agriculture; Agricultural Research Center; Dept. of Plant Pathology  
10183
- French, M C**  
England. monks Wood Experimental Station; Nature Conservancy, Huntingdonshire  
10425
- Fridlund, P R**  
Washington State University, Prosser, Washington; Department Of Plant Pathology  
10184
- Friedhoff, K**  
Hannover. institut fur Parasitologie; Tierarztliche Hochschule  
10012
- Friedhoff, K**  
Hannover. institute fur Parasitologie; Tierarztliche Hochschule  
10013
- Fromm, P O**  
Michigan. state University; Dept. of Physiology  
10408
- Frosheiser, F I**  
U. S. Dept. of Agriculture, St. Paul, Minnesota; Agricultural Research Service; Crops Research Division  
10185
- Fujita, T**  
Kyoto Univ., Japan; Dept. of Agricultural Chemistry  
10437
- Fukunaga, K**  
Institute of Physical and Chemical Research, Tokyo, Japan; Lab. of Insect Toxicology  
10426
- Fukuto, T R**  
California Univ., Riverside; Dept. of Entomology  
10014
- Furman, D P**  
California. university; Division of Parasitology, Berkeley  
10015
- Gaedike, R**  
Germany (Democratic Republic). deutsches Entomologisches; Institut, Eberswalde  
9894
- Gajan, R J**  
U. S. food and Drug Administration. division of Food; Chemistry and Technology, Wash., D. C.  
10409
- Gaur, A C**  
Indian Agricultural Research Institute; Division of Microbiology, New Delhi  
10438
- Gentner, W A**  
U. S. dept. of Agriculture. agricultural Research Service; Crops Research Division, Beltsville  
10290
- Getzendaner, M E**  
Dow Chemical Co.; Agricultural Products Dept., Midland, Mich.  
10410
- Giannattasio, M**  
France. faculte des Sciences; Laboratoire de Biologie cellulaire, Paris  
10439
- Gibbins, I. N**  
Guelph. University; Dept. of Microbiology  
10186
- Gilliland, F R**  
Auburn. university, Ala.  
10016
- Gillon, Y**  
Office de la Recherche Scientifique et Technique; Outre-Mer, Adiopodoume, Ivory Coast; Lab. d'Entomologie  
10017
- Gingrich, J B**  
Rutgers--the State University; Dept. of Entomology and Economic Zoology, N. J.  
10018
- Giran, F**  
France. Centre National de la Recherche Scientifique; Laboratoire de Microbiologie et Virologie, Montpellier  
10019
- Gochner, T A**  
Canada. dept. of Agriculture; Entomology Research Institute, Ottawa  
10020
- Goddard, P A**  
Harrow Weald, 69 Weighon Road, England  
9895
- Goddard, P A**  
Harrow Weald, 69 Weighon Road, England  
9896
- Goldin, M**  
Academy of Sciences, Estonia, USSR; Inst. of Experimental Biology  
10187
- Gonnert, R**  
Farhenfabriken Bayer AG; Institut fur Parasitologie und Veterinarmedizin, Wuppertal  
10374
- Gouger, R J**  
Florida. university; Dept. of Entomology and Nematology  
10022
- Grant, D L**  
Canada. dept. of National Health and Welfare; Research Laboratories, Ottawa  
10465
- Grant, G G**  
Virginia Polytechnic Institute; Dept. of Entomology  
10023
- Graves, P N**  
Wesleyan University, Middletown, Conn.  
10024
- Green, A A**  
England. agricultural Research Council; Pest Infestation Laboratory  
10387
- Green, N**  
U. S. dept. of Agriculture; Entomology Research Division, Beltsville  
10025
- Grewal, G S**  
Punjab. agricultural University; Dept. of Zoology-Entomology  
10026
- Grillo Torrado, J M**  
Buenos Aires. instituto Nacional de Tecnologia; Agropecuaria; Centro Nacional de Investigaciones Agropecuarias  
10334
- Grover, R K**  
Punjab. agricultural University; Dept. of Botany and Plant Pathology  
10188
- Gruenhagen, R D**  
North Carolina. state University; Dept. of Crop Science  
10440
- Gupta, V K**  
Delhi Univ., India; Dept. of Zoology  
9897
- Hackman, W**  
Helsinki. zoological Museum.  
9898
- Haines, L C**  
Australian Museum, Sydney  
9899
- Haines, L C**  
Australian Museum, Sydney  
9900
- Halstead, D G II**  
England. agricultural Research Council; Pest Infestation Laboratory  
9901
- Hamilton, K C**  
Arizona. agricultural Experiment Station, Tucson  
10291
- Hamilton, R I**  
Commonwealth Scientific and Industrial Research; Organization., St. Lucia, Australia; Div. of Tropical Pastures  
10335
- Hansberry, R**  
Shell Development Company, Modesto, Calif.  
10411
- Hansing, E D**  
Kansas State Univ., Manhattan; Dept. of Plant Pathology  
10189
- Harjal, S C**  
India. field Station for Investigations on Locusts; Bikaner  
10027
- Harley, J M B**  
Middlesex, 18 Leighton Avenue, England  
10028
- Haynes, W C**  
U. S. dept. of Agriculture. agricultural Research Service; Northern Regional Research Laboratory, Peoria  
10029
- Henzell, R F**  
Ruakura Soil Research Station, Hamilton, New Zealand  
10030
- Hepper, H C**  
Instituto Nacional de Microbiologia, Buenos Aires; Dept. de Entomologia Sanitaria  
9903
- Herbert, T T**  
North Carolina State Univ., Raleigh; Dept. of Plant Pathology  
10191
- Hermanson, H P**  
Rutgers--The State University, New Brunswick, N. J.; Dept. of Agricultural Chemistry  
10412
- Hermanson, H P**  
Rutgers - The State University, New Brunswick, N. J.; Bureau of Conservation and Environmental Science; Dept. of Agricultural Chemistry  
10467
- Hewitt, G B**  
U. S. dept. of Agriculture. agricultural Research Service; Entomology Research Division, Bozeman  
10246
- Hewlett, P S**  
England. agricultural Research Council; Pest Infestation Laboratory  
10031
- Hodges, R W**  
Agricultural Research Service, U. S. National Museum; Washington, D. C.; Systematic Entomology Lab.  
9905
- Hoenigsberg, H F**  
Andes. universidad; Instituto de Genetica  
10156
- Holloway, J D**  
Cambridge, Grape House, England  
10033
- Hopkins, D E**  
U. S. Agricultural Research Service, Kerrville; Entomology Research Division  
10034
- Howe, R W**  
England. agricultural Research Council; Pest Infestation Laboratory, Slough  
10035
- Huang, Y-M**  
Smithsonian Institution, Washington, D.C.; Southeast Asia Mosquito Project  
10164
- Hull, R J**  
Rhode Island. university; Dept. of Horticulture  
10292
- Hurpin, B**  
France. institut National de la Recherche Agronomique; Station de Recherches de Lutte Biologique et de Biocoenotique, Versailles  
10036

# BIOGRAPHICAL INDEX

**Hylin, J W**

**Hylin, J W**  
Mellon Institute, Pittsburg, Pa. 10441

**Ing, B**  
Imperial College, England; Dept. of Biochemistry 10038

**Inukai, T**  
Hokkaido Univ., Japan; Dept. of Agriculture 10318

**Ipert, G**  
France. institut National de la Recherche Agronomique; Station de Recherches de Lutte Biologique et de Zoologie Agricole d'Antibes. 10039

**Jackson, D**  
Akron. university, Ohio 9906

**Jakovljevic, D**  
New South Wales. veterinary Research Station, Glenfield. 10336

**Jaques, R P**  
Canada. dept. of Agriculture; Research Station, Harrow, Ontario 10041

**Jarnicka-Stanios, H**  
Medical Academy; Dept. of Electron Microscopy, Lublin 10042

**Jeffery, I. S**  
North Dakota. state University; Dept. of Agronomy 10293

**Johnson, R R**  
Amchem Products, Inc.; Research Dept.; Agricultural Chemicals Division 10442

**Jones, J P**  
Arkansas Agricultural Experiment Station, Fayetteville 10192

**Joshi, H C**  
India. dept. of Agriculture; State Entomological Research Laboratory, Jaipur 10043

**Joshi, H C**  
India. dept. of Agriculture; State Entomological Research Laboratory, Jaipur 10250

**Jotwani, M G**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi 10251

**July, J R**  
Sao Paulo. instituto Biologico; Seccao de Ornitopatologia 10338

**Kadel, W L**  
Kansas State University; College of Veterinary Medicine; Dept. of Pathology, Parasitology, and Public Health 10339

**Kadoun, A M**  
Kansas. state University; Dept. of Entomology 10044

**Kadoun, A M**  
Kansas. state University; Dept. of Entomology 10413

**Kadoun, A M**  
Kansas. state University; Dept. of Entomology 10414

**Kaiser, M N**  
U. S. Naval Medical Research Unit No. Three; Dept. of Medical Zoology, Cairo, Egypt 9908

**Kajita, II**  
Kyushu. university; Institute of Biological Control 10045

**Kalra, A N**  
Indian Institute of Sugarcane Research, Lucknow 10046

**Kamm, J A**  
Oregon State University; Dept. of Entomology 10047

**Kanitz, S**  
Genova Univ., Italy; Istituto di Igiene 10395

**Karns, P D**  
Carlos Avery Research Center, Forest Lake, Minn. 10375

**Kaufman, D D**  
U. S. Dept. of Agriculture, Beltsville, Md.; Agricultural Research Service; Crops Research Division 10427

**Kavadia, V. S.**  
College of Agriculture; Dept. of Entomology, Jabner 10048

**Kawahara, F K**  
U. S. Dept. of Health Education and Welfare, Cincinnati; Public Health Service; Div. of Water Supply and Pollution Control; Basic Data Branch 10396

**Kearby, W H**  
Pennsylvania. state University 10049

**Kearney, P C**  
Agricultural Research Service, Beltsville, Md.; Crops Research Div. 10468

**Kennedy, J S**  
Agricultural Research Council (London); Unit of Insect Physiology 10050

**Kerr, H D**  
Missouri. university; Dept. of Agronomy, Portageville 10294

**Kevan, D K M**  
McGill Univ., Quebec.; Dept. of Entomology 9909

**Khandelwal, G L**  
University of Udaipur, Udaipur; Dept. of Plant Pathology 10193

**Khoo, S G**  
Malaya. university; School of Biological Sciences 10051

**Kianta, B**  
Utrecht, university; Institute of Genetics, Netherlands 10157

**Kiesling, R L**  
North Dakota State Univ., Fargo; Plant Pathology Dept. 10194

**Kilpatrick, R A**  
Agricultural Research Service, Beltsville, Md.; Crops Research Div. 10195

**King, E G**  
Louisiana. state University; Dept. of Entomology, Baton Rouge 10052

**Klein, J M**  
Institut Pasteur du Cambodge, Phnom-Penh.; Office de la Recherche scientifique et technique Outre-Mer 9910

**Kline, D M**  
North Carolina State Univ., Raleigh; Crops Research Div. 10196

**Knulle, W**  
Ohio. agricultural Research and Development Center; Dept. of Zoology and Entomology, Wooster 10053

**Kohler, H.**  
Deutsche Akademie der Landwirtschaftswissenschaften; Institut fur Pflanzenzuchtung Quedlinburg, Berlin (East) 10428

**Koyumdjieva, M**  
Sofia. Academie Bulgare des Sciences; Section de Biologie 10364

**Krogerus, H**  
Helsinki, Sbjorneborgsvagen, Finland 9912

**Krogerus, H**  
Helsinki, S Bjorneborgsvagen, Finland 9913

**Kugler, J**  
Tel-Aviv. university; Dept. of Zoology 10054

**Kunze, G W**  
Texas A and M University, College Station; Texas Agricultural Experiment Station; Soil and Crop Sciences Dept. 10397

**Kuratle, H**  
DuPont (E. I) de Nemours and Co.; Plant Research Laboratory, Wilmington, Del. 10295

**Lacher, V**  
Menlo Park. stanford Research Institute; Life Sciences Research 10055

**Lagace, C F**  
California. university; Division of Biological Control, Berkeley 9914

**Lamartiniere, C A**  
Louisiana. state University. agricultural Experiment; Station; Dept. of Microbiology 10429

**Lamey, H A**  
United Nations. fAO; Rice Protection Research and Training Center, Bangkok 10197

**Lammler, G**  
Justus Liebig-Universitat; Institut fur Parasitologie und Parasitare Krankheiten; der Tiere, Giessen 10341

**Launer, J E**  
Oregon. state Dept. of Agriculture; Laboratory Services, Salem 10469

**Lavers, D W**  
Cairns, 307 Mulgrave Road, Australia 10376

**Lawrence, J H**  
U. S. food and Drug Administration. division of, Pesticides, Wash., D. C. 10470

**Lee, C C**  
King's College; Dept. of Biological Sciences, Wilkes-Barre, Pa. 10377

**Lee, D L**  
Houghton Poultry Research Station, England 10378

**LeGrand, H E**  
U. S. Geological Survey, Raleigh, N. C.; Water Resources Division 10398

**Leibovitz, I**  
Cornell University; Dept. of Avian Diseases, Eastport, N. Y. 10342

**Lempke, B J**  
Amsterdam, Oude IJselstraat 12 III, Netherlands 10056

**Lensny, Y**  
Hebrew University; Dept. of Entomology, Rehovot 10057

**Lenz, M**  
Freien Univ., Berlin, West Germany; Institut fur Angewandte Zoologie 10343

**Lewis, D J**  
British Museum (Natural History); Medical Research Council 9915

**Ling, K C**  
International Rice Research Institute, Los Banos, Philippine 10198

**Lingg, A J**  
Kansas. state University; Division of Biology 10415

**Littrell, R H**  
Georgia Univ. Coll. of Agriculture, Tifton, Ga.; Coastal Plain Station 10199

**Lopez-Gorge, J**  
Granada. instituto 'Lopez-Neyra' de Purasitologia; Seccion de Fisioparasitologia, Spain 10379

**Lutz-Ostertag, y**  
Centre National de la Recherche Scientifiques.; Clermont-Ferrand, France; Lab. de Biologie animale et Lab. no. 4 10430

**Lyall, M**  
Colorado State University; College of Veterinary Medicine 10344

**MacCollom, G B**  
Vermont. university. agricultural Experiment Station 10399



# BIOGRAPHICAL INDEX

Pandey, N D

- MacConnell, W P**  
University of Massachusetts, Amherst  
10485
- Macer, R C F**  
Rothwell Plant Breeders, England  
10200
- Mackauer, M**  
Simon Fraser University; Dept. of Biological Sciences, Canada  
10059
- Mackay, R J**  
McGill University; Dept. of Zoology  
10060
- Magnoler, A**  
Italy. stazione Sperimentale del Sughero, Sassari  
10061
- Mahoney, D F**  
Australia. commonwealth Scientific and Industrial Research; Organization; Long Pocket Laboratories, Brisbane  
10345
- Maitland, P S**  
Liverpool. university; Dept. of Zoology, England  
10062
- Maitlen, J C**  
U. S. dept. of Agriculture. agricultural Research Service; Entomology Research Division, Yakima  
10471
- Mall, S B**  
Allahabad. university; Dept. of Zoology  
10063
- Malone, B**  
U. S. food and Drug Administration. division of; Pesticides. Wash., D. C.  
10416
- Malone, B**  
U. S. Food and Drug Administration. division of; Pesticides, Wash., D. C.  
10472
- Martin, J P**  
University of California, Riverside; Dept. of Soils and Plant Nutrition  
10400
- Mathot, G**  
Lovanium University. kinshasa, Congo  
9916
- Mathur, K C**  
Commonwealth Institute of Biological Control; Indian Station  
10254
- Mathur, L M L**  
Udaipur. university. agricultural Experiment Station; Dept. of Entomology  
10064
- Mathur, S B**  
Copenhagen. institute of Seed Pathology for Developing; Countries  
10201
- Mathys, G**  
France. station federale d'essais agricoles; Lausanne-Changins  
10065
- McCart, M**  
Food and Drug Administration, Washington, D. C.  
10417
- McCully, K A**  
Canada. dept. of National Health and Welfare; Research Laboratories, Ontario  
10473
- McDaniel, B**  
South Dakota. state University; Dept. of Entomology-Zoology  
9917
- McEnroe, W D**  
Massachusetts. university. agricultural Experiment Station; Waltham Field Station  
10067
- McIlachlan, A J**  
Malawi. university. chancellor College; Dept. of Biology  
10066
- McNew, G L**  
Boyc Thompson Inst., Yonkers, N. Y.  
10202
- McClelland, G A H**  
California. university; Dept. of Entomology, Davis  
10072
- Medvedev, L N**  
USSR. academy of Sciences; Laboratory of Biogeocoenology, Leningrad  
9918
- Meggitt, W F**  
Dept. of Crop Science  
10296
- Meikle, R W**  
Dow Chemical Co.; Agricultural Products Research Laboratory, Walnut Creek  
10401
- Meinander, M**  
Helsinki. zoological museum  
9919
- Meneghini, M**  
Sao Paulo. instituto Biologico; Seccao de Bioquimica Vegetal  
10443
- Menhinick, E F**  
North Carolina. university; Dept. of Biology  
10069
- Menhinick, E F**  
North Carolina. university; Dept. of Biology. Charlotte  
10255
- Menon, M G R**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
9920
- Menon, M G R**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
10365
- Menon, M G R**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
9921
- Mentzelos, I**  
Thessaloniki. plant Protection Institute  
10070
- Mertz, D B**  
California. university; Dept. of Biological Sciences, Santa Barbara  
10071
- Meyers, J**  
Illinois. university; Dept. of Entomology  
10073
- Michno-Zatorska, Z**  
Copernicus University. turon; Dept. of General Botany, Poland  
10203
- Millhollon, R W**  
U. S. dept. of Agriculture. agricultural Research Service; Crops Research Division, Houma  
10297
- Milo, G E**  
Roswell Park Memorial Institute, Buffalo  
10204
- Minshall, W H**  
Canada. dept. of Agriculture.; Research Branch, Ontario  
10298
- Misato, T**  
Institute Of Physical and Chemical Research, Tokyo, Japan  
10205
- Misra, B C**  
Cuttack. central Rice Research Institute  
10075
- Mitchell, R**  
Ohio. state University  
10076
- Monastero, S**  
Palermo. istituto di Entomologia agraria  
10256
- Mookherjee, P B**  
Indian Agricultural Research Institute; Division of Entomology, Delhi  
10388
- Moore, B J**  
Arkansas. University; Dept. of Plant Pathology  
10206
- Moreland, D E**  
North Carolina. state University; Dept. of Crop Science  
10299
- Morgan, I**  
Australia. dept. of Agriculture. division of Animal; Health, Melbourne  
10347
- Morgan, P W**  
Texas. A M University; Dept. of Plant Sciences  
10300
- Moriarty, F**  
England. monks Wood Experimental Station; Nature Conservancy, Huntingdon  
10078
- Moriarty, F**  
England. monks Wood Experimental Station; Nature Conservancy, Huntingdon  
10079
- Morris, O N**  
Canada. dept. of Forestry; Forest Research Laboratory, Victoria, British Columbia  
10257
- Moseman, J G**  
Agricultural Research Service, Beltsville, Md.; Crops Research Div.  
10207
- Nair, M R G K**  
Agricultural College and Research Institute, Vellayani  
10319
- Nalewaja, J D**  
North Dakota. state University; Dept. of Agronomy  
10301
- Narain, A**  
Orissa. university of Agriculture and Technology; Dept. of Mycology and Plant Pathology  
10208
- Navarro, S**  
Israel. ministry of Agriculture. dept. of Plant; Protection; Stored Products Division, Jaffa  
10389
- Neff, S E**  
Virginia. polytechnic Institute; Dept. of Biology  
10080
- Neisham, O**  
Morton Chemical Co., Woodstock, Ill.  
10209
- Newsom, L D**  
Louisiana. state University; Dept. of Entomology  
10402
- Nieser, N**  
Universite de l'Etat; Laboratoire Zoologique, Utrecht  
9922
- Nieuwenhuis, E J**  
Rotterdam, Bentincklaan 37a, Netherlands  
9923
- Nikolajev, G V**  
USSR. academy of Sciences; Zoological Institute, Leningrad  
9924
- Nilsson-Tillgren, T**  
Copenhagen. university; Institute of Genetics  
10210
- Nilsson, M R**  
Sao Paulo. instituto Biologico; Seccao de Enzootias  
10348
- Nilsson, M R**  
Sao Paulo. instituto Biologico; Seccao de Enzootias  
10349
- Nooden, L D**  
Michigan. University; Dept. of Botany  
10444
- Norris, D M**  
Wisconsin. university; Dept. of Entomology, Madison  
10082
- Odak, S C**  
Jawaharlal Nehru Krishi Vishwa Vidyalala; Gwalior Campus, Jabalpur  
10259
- Ofori, C S**  
Soil Research Inst., Kumasi, Ghana  
10445
- Oguni, I**  
Nagoya University, Chikusa, Japan; Lab. of Biochemistry and Institute for Biochemical Regulation  
10446
- Oldroyd, H**  
British Museum (Natural History)  
9927
- Pal, B P**  
Inbyan Council of Agricultural Research, New Delhi  
10211
- Pan, M L**  
Pennsylvania. university; Dept. of Biology  
10083
- Pandey, N D**  
Government Agricultural College, Kanpur  
10084

# BIOGRAPHICAL INDEX

## Papasolomontos, A

- Papasolomontos, A**  
Cyprus. ministry of Agriculture and Natural Resources; Agricultural Research Institute, Nicosia  
10212
- Papavizas, G C**  
U. S. Dept. of Agriculture, Beltsville, Md.; Agricultural Research Center; Crops Research Division  
10213
- Parker, A II**  
Sir John Cass College; Dept. of Biological Sciences, London  
10085
- Parry, W H**  
Aberdeen. university; Dept. of Forestry  
10086
- Parshad, B**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
10087
- Pavan, C**  
Texas Univ., Austin  
10158
- Pearson, K G**  
Oxford. university; Laboratory of Physiology  
10089
- Pederson, V D**  
North Dakota State Univ., Fargo; Dept. of Plant Pathology  
10214
- Perrott, D C F**  
New Zealand. dept. of Scientific and Industrial Research; Entomology Division  
10090
- Peters, E J**  
Agricultural Research Service; Crops Research Division  
10303
- Phelps, R J**  
Rhodesia. university; Division of Biological Sciences  
10091
- Phelps, R J**  
Rhodesia. university College  
10092
- Philogene, B J R**  
Quebec. dept. of Forestry and Rural Development; Forest Research Laboratory  
10093
- Poinar, G O**  
California. university; Dept. of Entomology and Parasitology, Berkeley  
10094
- Pollard, E**  
England. monks Wood Experimental Station; Nature Conservancy, Huntingdon  
10260
- Porter, M L**  
Food and Drug Administration, Washington, D. C.; Division of Food Chemistry and Technology  
10475
- Power, R J B**  
New Zealand. dept. of Scientific and Industrial Research; Entomology Division  
10095
- Pradhan, S**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
10390
- Prakash, S**  
Chicago. university; Dept. of Biology  
10159
- Price, R D**  
Minnesota. university; Dept. of Entomology, Fisheries, And Wildlife, St. Paul  
9930
- Price, W C**  
Florida. university; Plant Virus Laboratory  
10219
- Pryor, R L**  
U S Dept Of Agriculture, Beltsville, Maryland; Agricultural Research Service  
10447
- Puthz, V**  
Germany. (Federal Republic). limnologische fluss-tation.; Schlitz.  
9931
- Rahman, S J**  
India. national Institute of Communicable Dis-eases; Southern India Branch, Coonoor  
10096
- Rawat, R R**  
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabal-pur.  
9932
- Rawat, R R**  
Jawaharlal Nehru Krishi Vishwa Vidyalala; Dept. of Entomology, Jabalpur  
10097
- Rawnsley, J**  
Food and Agriculture Organization, Accra, Ghana; Crop Protection Branch  
10391
- Ray, B**  
North Carolina. agricultural and Technical Univer-sity; Dept. of Plant Science  
10304
- Ray, S**  
Indian Agricultural Research Institute; Division of Entomology, Delhi  
10098
- Reinecke, I. H**  
North Dakota. state University; Dept. of Entomolo-gy  
10100
- Rice, R E**  
California. university; Dept. of Entomology, Davis  
10101
- Rich, S**  
Connecticut Agriculture Experiment Station, New Haven  
10476
- Richard, G**  
La Quinoleine S. A., Paris, France; Services de Recherches Agronomiques  
10220
- Riek, E F**  
Australia. Commonwealth Scientific and Industrial Research; Organization. Division of Entomology, Canberra  
9933
- Riemann, J G**  
North Dakota. agricultural Research Service; Metabolism and Radiation Laboratory  
10102
- Riemer, D N**  
Rutgers University; Dept. of Soils and Crops, New Brunswick, N. J.  
10448
- Ritcher, P O**  
Oregon. state University; Dept. of Entomology  
9934
- Robards, G E**  
New South Wales. dept. of Agriculture. agricul-tural; Research Station, Trangie  
10351
- Roberts, P A**  
Oregon State Univ., Corvallis  
10160
- Robinson, M H**  
Texas A and M Univ., College Station; Inst. of Life Science  
10103
- Rock, G C**  
North Carolina. state University; Dept. of En-tomology  
10104
- Rodin, J O**  
Syracuse. university; State University College of Forestry; Dept. of Chemistry, N. Y.  
10105
- Roeth, F W**  
Nebraska. university; Dept. of Agronomy, Lincoln  
10477
- Roller, H**  
Texas A and M Univ., College Station; Inst. of Life Science  
10106
- Rosay, B**  
Utah. salt Lake County Mosquito Ahatement Dis-trict, Midvale  
10107
- Roth, L M**  
U. S. Army. natick Laboratories; Pioneering Research Laborties, Mass.  
9935
- Round, M C**  
Equine Research Station, Animal Health Trust, Newmarket  
10380
- Rounds, H D**  
Wichita State Univ., Kans.; Dept. of Biology  
10108
- Rozen, J G**  
The American Museum of Natural History, New York, N. Y.; Dept. of Entomology  
10109
- Sachan, J N**  
Udaipur. university; College of Agriculture, Jobner  
10110
- Saldarriaga, V, A**  
Instituto Colombiano Agropecuario, Bogota, Columbia  
10261
- Sands, W A**  
London. ministry of Overseas Development; Termite Research Unit  
9936
- Satpathy, J M**  
College of Agriculture; Dept. of Entomology, Bhu-banewar  
10262
- Savulescu, A**  
Institutul de biologie, Traian Savulescu, Bucharest., Romania  
10221
- Saxena, D K**  
Jawaharlal Nehru Krishi Vishwa Vidyalaya; Dept. of Entomology, Jabalpur  
10263
- Schaerffenberg, B**  
Graz. university; Zoologisches Institut  
10353
- Scheinberg, E**  
Calgary. university; Dept. of Biology  
10161
- Schildknecht, H**  
Heidelberg. universitat; Organisch-Chemisches In-stitut, Germany  
10111
- Schmeling, B von**  
Uniroyal, Inc., Bethany, Conn.; Biological Research  
10222
- Scholtyssek, E**  
Bonn. university; Zoologisches Institut; Protozoologische Arbeitsgruppe  
10354
- Schroder, R F W**  
U. S. Dept. of Agriculture. agricultural Research Service; Entomology Research Division, Beltsville  
9937
- Sevastopulo, D G**  
Mombasa, Africa  
9938
- Sevastopulo, D G**  
Mombasa, Africa  
9939
- Shaldybida, E S**  
Gorky. pedagogical Institute  
9940
- Sharma, S K**  
India. dept. of Agriculture; State Entomological Research Laboratory, Jaipur  
10112
- Shatoury, H H**  
Ulster. new University; Dept. of Biological and En-vironmental Studies, North; Ireland  
10113
- Shaw, D D**  
Canada. forest Research Laboratory, New Brun-swick  
10114
- Shaw, W C**  
U. S. Dept. of Agriculture; Agriculture Research Service; Crops Research Division  
10486
- Shay, J W**  
Kansas. university; Dept. of Physiology and Cell Biology  
10115
- Sheridan, J E**  
Victoria University of Wellington; Botany Dept.  
10223
- Shrivastav, H P O**  
College of Veterinary Science, Jabalpur, India; Dept. of Parasitology  
10381
- Shulman, S**  
New York. state University; Dept. of Bacteriology and Immunology  
10166
- Sinclair, W**  
Wales. university College; Dept. of Zoology  
9942



# BIOGRAPHICAL INDEX

Wilkinson, R E

- Singh, G R**  
Sugarcane Breeding Inst., Coimbatore, India  
10224
- Singh, J**  
Canada. dept. of Agriculture; Scientific Services Laboratory, Ottawa  
10478
- Singh, O P**  
Punjab. agricultural University  
10116
- Singh, R P**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
10117
- Slater, C II**  
Oregon. state University; Dept. of Farm Crops  
10305
- Smiley, I E**  
Purdue University, Lafayette, Ind.; Dept. of Biochemistry  
10356
- Smith, C N**  
U. S. Dept. of Agriculture, Gainesville, Fla.; Agricultural Research Service; Entomology Research Division  
10118
- Smith, P D**  
Connecticut. university; Dept. of Genetics  
10162
- Smith, W H**  
Yale University, New Haven; School of Forestry  
10225
- Sonenshine, D E**  
Virginia. old Dominion College; Dept. of Biology, Norfolk  
10119
- Springer, W T**  
Louisiana. state University; Dept. of Veterinary Science  
10383
- Srivastava, B P**  
Udaipur. university; Dept. of Entomology  
10266
- Srivastava, P D**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
10320
- Srivastava, P D**  
Indian Agricultural Research Institute; Division of Entomology, Delhi  
10321
- Srivastava, P D**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
10322
- Stenersen, J**  
Norwegian Plant Protection Institute, Vollebakk  
10449
- Steward, K K**  
U. S. dept. of Agriculture. agricultural Research Service; Crops Research Service, Fort Lauderdale  
10306
- Stoffolano, J G**  
Massachusetts University; Entomology Dept.  
10120
- Strambi, A**  
Centre National de la Recherche Scientifique, Marseille, France; Inst. de Neurophysiologie et Psychophysiologie  
10121
- Streams, F A**  
Connecticut. university; Biological Sciences Group  
10122
- Struble, G R**  
Forest Service, Berkeley, Calif.; Pacific Southwest Forest and Range Experiment Station  
10267
- Stussi, T**  
France. centre National de la Recherche Scientifique; Laboratoire associe de Physiologie comparee de la; Thermoregulation, Strasbourg  
10123
- Sullivan, D T**  
New Mexico State University, Las Cruces, New Mexico; Dept Of Horticulture  
10450
- Sullivan, N D**  
Queensland. animal Research Institute; Dept. of Primary Industries  
10358
- Swanson, C R**  
Mississippi. delta Branch Experiment Station, Stoneville  
10308
- Szmidt, A**  
Organisation Internationale de Lutte Biologique, Paris; France  
10124
- Tahori, A S**  
Roosevelt University, Chicago  
10125
- Tanada, Y**  
California. university; Division of Entomology, Berkeley  
10126
- Taylor, R W**  
Australia. commonwealth Scientific and Industrial Research; Organization; Division of Entomology, Canberra  
9944
- Taylor, T A**  
Ibadan. university; Dept. of Agricultural Biology  
10268
- Taylorson, R B**  
U. S. dept. of Agriculture. agricultural Research Service; Crops Research Division, Beltsville  
10309
- Taylorson, R. B.**  
U. S. dept. of Agriculture. agricultural Research Service; Crops Research Division, Beltsville  
10451
- Teotia, T P S**  
Government Agricultural College, Kanpur  
10127
- Thiele, G F**  
Lincoln College, Canterbury, New Zealand  
10128
- Thiele, H U**  
Koln. universitat; Zoologisches Institut  
10129
- Thind, B S**  
Punjab. agricultural University; Dept. of Botany and Plant Pathology  
10226
- Thomson, J A**  
McLbourne. university; Dept. of Genetics  
10130
- Todd, D H**  
New Zealand. Dept. of Scientific and Industrial Research; Entomology Division, Palmerston North  
10131
- Tottenham, C E**  
Cambridge, 39 Eltislcy Avenue, England  
9945
- Tsukamoto, M**  
Nagasaki Univ., Japan; Inst. for Tropical Medicine  
10163
- Tueller, P T**  
U. S. dept. of Agriculture. agricultural Research Service; Division of Renewable Natural Resources, Reno, Nev.  
10310
- Uffen, R W J**  
London, 4 Vaughan Avenue, England  
10132
- Upchurch, R P**  
Monsanto Co.; Agricultural Division, St. Louis, Mo.  
10311
- Vago, C**  
France. institut National de la Recherche Agronomique; Station de Recherches Cytopathologiques, Montpellier  
10133
- Vail, P V**  
U. S. dept. of Agriculture; Entomology Research Division, Mesa, Ariz.  
10134
- Varma, J P**  
Udaipur. university. agriculture Experiment Station  
10227
- Varshney, R K**  
India. zoological Survey; Eastern Regional Station, Shillong  
10135
- Vendrell, M**  
Sydney. university School of Biological Sciences  
10452
- Vereecke, A**  
Belgium. faculty of Agricultural Sciences, Ghent  
10136
- Vick, K**  
Oklahoma. state University  
10138
- Vir, D**  
Indian Agricultural Research Institute; Division of Mycology and Plant Pathology, New Delhi  
10228
- Voerman, S**  
Netherlands. laboratory for Research on Insecticides, Wageningen  
10479
- Voss, G**  
CIBA Ltd.; Agrochemical Division, Basel  
10419
- Wadhi, S R**  
Indian Agricultural Research Institute; Division of Entomology, New Delhi  
9948
- Wagner, E**  
Hamburg, 103 Moorreye, Germany (Federal Republic)  
9949
- Wagner, E**  
Hamburg, 103 Moorreye, Germany (federal Republic)  
9950
- Wagner, E**  
Hamburg, 103 Moorreye, Germany (federal Republic)  
9951
- Wagner, E**  
Hamburg, 103 Moorreye, Germany (Federal Republic)  
9952
- Wallace, H A H**  
Canada Dept. of Agriculture Research Station, Winnipeg; Manitoba  
10229
- Wallace, J B**  
Georgia. university; Dept. of Entomology  
10139
- Ware, G W**  
Arizona. university; Dept. of Entomology  
10403
- Ware, G W**  
Arizona. university; Dept. of Entomology  
10480
- Watt, J C**  
New Zealand. dept. of Scientific and Industrial Research; Entomology Division  
9953
- Watt, J C**  
New Zealand. dept. of Scientific and Industrial Research; Entomology Division  
10140
- Wax, L M**  
U. S. dept. of Agriculture. agricultural Research Service; Crops Research Division, Urbana  
10312
- Wene, G P**  
Arizona. university; Dept. of Entomology  
10269
- Wheeler, W B**  
Florida. university; Pesticide Research Laboratory  
10420
- Whitworth, J W**  
New Mexico. state University; Dept. of Agronomy  
10313
- Wiktor, T J**  
Wistar Institute of Anatomy and Biology, Philadelphia, Pa.  
10360
- Wilcox, M**  
Florida. university; Dept. of Agronomy, Gainesville  
10314
- Wiley, M**  
U. S. Dept. of Agriculture, Albany, Calif.; Agricultural Research Service; Western Utilization Research and Development Division; Western Regional Research Laboratory  
10481
- Wilkinson, R E**  
Georgia. university. college Of Agriculture Experiment; Stations  
10315

# BIOGRAPHICAL INDEX

## Williams, M C

- Williams, M C  
U. S. dept. of Agriculture. agricultural Research  
Service; Crops Research Division, Logan, Utah  
10454
- Williams, P W  
U. S. dept. of Interior. federal Water Pollution  
Control; Administration, Athens, Ga.  
10421
- Williams, S A  
Kent, 78 Cedar Drive, England  
9954
- Williams, S A  
Sutton at Hone, 79 Cedar Drive, England  
9955
- Wilson, H P  
Rutgers- The State University, New Brunswick,  
N.j.; Dept. of Soils and Crops  
10316
- Wisk, E L  
University of Delaware Substation, Georgetown  
10317
- Wollerman, E H  
U. S. dept. of Agriculture. forest Service;  
Northeastern Forest Experiment Station; Forest In-

- sect and Disease Laboratory, Ohio  
10141
- Wright, D S C  
New Zealand. Dept. of Scientific and Industrial  
Research; Crop Research Division, Lincoln  
10230
- Wright, D S C  
New Zealand. Dept. of Scientific and Industrial  
Research; Crop Research Division, Lincoln  
10231
- Wright, F C  
U. S. dept. of Agriculture. toxicological Investiga-  
tions; Laboratory, Kerrville  
10482
- Wu, Y F  
Oklahoma. agricultural Experiment Station; Dept.  
of Botany and Plant Pathology  
10455
- Yadav, T D  
Indian Agricultural Research Institute; Division of  
Entomology, Delhi  
10270
- Yarwood, C E  
California. university; Dept. of Plant Pathology,

- Berkeley  
10232
- Yinon, U  
Hebrew University; Dept. of Entomology and  
Venomous Animals, Jerusalem  
10142
- Yonke, T R  
Missouri. university; Dept. of Entomology, Colum-  
bia  
9956
- Yonke, T R  
Missouri. university; Dept. of Entomology, Colum-  
bia  
9957
- Yurkiewicz, W J  
Millersville. state College; Dept. of Biology  
10143
- Zavattari, E  
Accademia Nazionale Italiana di Entomologia  
10144
- Zemskaya, A A  
USSR. academy of Medical Sciences; Institute of  
Epidemiology and Parasitology, Moscow  
10145



# AUTHOR INDEX

|                      |       |                  |       |                            |       |                      |       |
|----------------------|-------|------------------|-------|----------------------------|-------|----------------------|-------|
| Abbruzzese, L        | 10457 | Black, C C       | 10274 | Conha, A B da              | 10158 | Flanders, S E        | 10006 |
| Abeygunawardena, D V | 10170 | Block, W         | 9975  | Couture, G                 | 9993  | Fleck, E E           | 10463 |
| Acland, H            | 10351 | Blum, M S        | 10139 | Crawford, J G              | 10330 | Folwaczny, B         | 9891  |
| Acton, A B           | 10003 | Bluthgen, P      | 9873  | Crawley, I                 | 10050 | Fonseca, J P de      | 9892  |
| Adams, C             | 10141 | Bode, L E        | 10483 | Crompton, D W T            | 10373 | Forcom, D L          | 10007 |
| Adams, P B           | 10213 | 10484            |       | Crossley, D A              | 10069 | Ford, J B            | 10086 |
| Adcakh, K L          | 10228 | Boertitz, S      | 10432 | Crovetti, A J              | 10460 | Fox, K J             | 10008 |
| Adhikari, H R        | 10324 | Bogawat, J K     | 9976  | Crumpacker, D W            | 10153 | Frank, J II          | 10009 |
| Ahrens, R W          | 10171 | 10433            |       | Cuerrier, J P              | 10406 | 10010                |       |
| Alexander, C P       | 9865  | Bohra, O P       | 10112 | Cunningham, H B            | 9889  | Frank, R             | 10286 |
| 9866                 |       | Borutzky, E V    | 9874  | Cunningham, I C            | 10239 | 10287, 10288         |       |
| Alexander, M         | 10422 | Boston, E        | 10030 | 10240                      |       | Frazier, L C         | 10447 |
| Alexander, R R       | 10326 | Boursin, C       | 9875  | Dallyn, S L                | 10289 | Freed, V II          | 10464 |
| Ali, G M             | 10173 | 9977             |       | Dang, K                    | 9994  | Freeman, B E         | 10011 |
| Alumot, E            | 10057 | Bovey, R W       | 10275 | Danielson, L L             | 10280 | Freeman, T E         | 10183 |
| Amargier, A          | 10133 | Bowman, M C      | 10404 | Das, K K                   | 9989  | French, M C          | 10425 |
| Amhrat, V do         | 10327 | Bradley, J       | 10378 | Das, N M                   | 10319 | Freytag, P II        | 9883  |
| Ananthakrishman, T N | 9867  | Bradley, S G     | 10340 | Daum, R J                  | 10068 | Fricke, D II         | 10289 |
| Ananthakrishnan, T N | 9958  | Bradoo, B L      | 9978  | David, H                   | 10046 | Fridlund, P R        | 10184 |
| Anderson, L E        | 10284 | Brady, H A       | 10276 | David, J                   | 9995  | Friedhoff, K         | 10012 |
| 10285                |       | Breidenbach, A W | 10396 | Davies, T H                | 9882  | 10013                |       |
| Anderson, N H        | 9965  | Brewerton, H V   | 10405 | Davis, D G                 | 10154 | Fromm, P O           | 10408 |
| Anderson, R J        | 10328 | Brookes, H M     | 9876  | Dawson, J II               | 10305 | Frosheiser, F I      | 10185 |
| Anderson, W P        | 10313 | Brown, F M       | 9877  | Day, C L                   | 10483 | Fuhrmann, T W        | 10058 |
| Appleby, A P         | 10305 | Brown, L R       | 10386 | 10484                      |       | Fujimoto, M S        | 10032 |
| Argyriou, J C        | 10241 | Brown, R H       | 10274 | Dayal, R                   | 10178 | Fujita, T            | 10437 |
| Arieta, P A          | 10334 | Browning, L S    | 10148 | DeBaca, P                  | 10241 | Fukami, J I          | 10426 |
| Arnott, H J          | 9960  | Bryan, D E       | 10040 | Dee, M K                   | 10403 | Fukunaga, K          | 10426 |
| Arny, D C            | 10171 | Buck, F D        | 9878  | 10480                      |       | Fukuto, T R          | 10014 |
| Aronson, J N         | 9961  | 9979             |       | Delanoue, P                | 10256 | Furman, D P          | 10015 |
| Arthur, D R          | 9962  | Buckett, J S     | 9879  | Delfel, N E                | 10461 | Fursch, H            | 9893  |
| Ashrafi, S H         | 10173 | Bueding, E       | 10369 | Delmas, J C                | 9996  | Furtick, W R         | 10305 |
| Assche, Ch J V       | 10434 | Burke, J A       | 10470 | DeLong, D M                | 9883  | Gaedike, R           | 9894  |
| Atanassov, N         | 9868  | 10472, 10475     |       | Demolin, G                 | 9980  | Gajan, R J           | 10409 |
| Atchley, W R         | 9963  | Burkholder, W E  | 10105 | 9996                       |       | 10475                |       |
| Atienza Fernandez, M | 10367 | Burnside, O C    | 10277 | Denell, R E                | 10155 | Galluzzi, G          | 10457 |
| Atwal, A S           | 10026 | 10477            |       | Derevici, A                | 9997  | Gaur, A C            | 10438 |
| Auerbach, S          | 10431 | Burrows, P M     | 10091 | Deschka, G                 | 9884  | Gebhardt, M R        | 10483 |
| Avidov, Z            | 9964  | 10092            |       | Dessart, P                 | 9885  | 10484                |       |
| Ayala, F J           | 10146 | Butler, L I      | 10248 | Dhamdhare, S V             | 10259 | Gellatley, J G       | 10466 |
| Azam, K M            | 9965  | Butterworth, P E | 10370 | Dharmaraju, E              | 9998  | Genn, B G            | 10237 |
| Bae, S H             | 10234 | Byrom, M H       | 10282 | Dhillon, A J               | 10027 | Gentner, W A         | 10290 |
| Baggiolini, M        | 10065 | Caceva, K        | 10371 | Diaz-Colon, J D            | 10275 | Gentry, C R          | 10404 |
| Baker, D W           | 10363 | Cadahia, D       | 9980  | Dima, V                    | 9997  | George, D A          | 10248 |
| Baker, J M           | 10082 | Cahill, W P      | 10403 | Disthaporn, S              | 10197 | Gershon, H           | 10202 |
| Balfour-Browne, J    | 9869  | Calderara, P     | 9880  | Doane, J F                 | 9999  | Getzenaner, M E      | 10410 |
| Ball, B D            | 10167 | Calderon, M      | 10389 | Dobson, K J                | 10332 | Ghai, S              | 9920  |
| Baloch, G M          | 10272 | Cals, P          | 9969  | Dobson, W J                | 10115 | 9921                 |       |
| Banerjee, B          | 9966  | Calvo, J M       | 10326 | Doharey, K L               | 9994  | Ghani, M A           | 10272 |
| Banerji, D K         | 10046 | 10329            |       | Donahaye, E                | 10389 | Giannattasio, M      | 10439 |
| Banita, E            | 10235 | Camhi, J M       | 9981  | Dowler, C C                | 10275 | Gibbins, L N         | 10186 |
| Bantlari, E E        | 10174 | 9982, 9983       |       | 10282                      |       | Gilliland, F R       | 10016 |
| Barnett, R D         | 10192 | Carney, G C      | 9984  | Drake, E F                 | 10045 | Gillon, D            | 10017 |
| Barnley, G R         | 9915  | Carter, C I      | 9881  | Drew, W A                  | 10138 | Gillon, Y            | 10017 |
| Barr, W F            | 9870  | Casida, J E      | 10278 | Drooz, A T                 | 10000 | Gingrich, J B        | 10018 |
| Barthel, W F         | 10392 | Castello, G      | 10395 | Dubey, J P                 | 10381 | Giran, F             | 10019 |
| Basler, E            | 10455 | Castro, J G      | 10372 | Dugdale, J S               | 9886  | Glassman, E          | 10152 |
| Batiste, W C         | 10236 | Castro, L E      | 10156 | Dumbleton, L J             | 9887  | Gochbauer, T A       | 10020 |
| Baur, J R            | 10308 | Cavalcaselle, B  | 9985  | 9888                       |       | Goddard, P A         | 9895  |
| Bazzi, B             | 10457 | Chaboussou, F    | 10149 | Dustman, E H               | 10407 | 9896                 |       |
| Beames, C G          | 10368 | Chadha, K C      | 10176 | Duthoit, J L               | 10133 | Goldin, M            | 10187 |
| Beattie, H E R       | 10336 | Chamberlain, W F | 10034 | Dutta, D N                 | 10262 | Gomez Garcia, V      | 10367 |
| Beever, D J          | 10175 | Chambers, V H    | 9986  | Ebert, E                   | 10434 | Gonnert, R           | 10374 |
| Bell, M R            | 10068 | Champ, B R       | 10237 | Eckert, R E                | 10283 | Gonzalez Castro, J   | 10367 |
| Bell, W J            | 10083 | Chand, J N       | 10177 | Economides, C V            | 10212 | Goodger, B V         | 10345 |
| Benassy, C           | 9967  | 10226            |       | Edgington, L V             | 10179 | Goonewardene, H F    | 10021 |
| Benjamin, D M        | 10049 | Chang, G Y       | 10126 | EHara, Y                   | 10180 | Gorman, J E          | 10105 |
| Bennett, N           | 10481 | Chapman, F R H   | 10279 | Eichlin, T D               | 9889  | Gouger, R J          | 10022 |
| Bentley, D R         | 9968  | Chapman, R F     | 9987  | Eisenbraun, E J            | 10138 | Granobles, L A       | 10156 |
| Bergman, S J         | 10089 | Chatterjee, G C  | 10352 | Eldefrawi, M E             | 10242 | Grant, D L           | 10465 |
| Beri, Y P            | 10365 | Chatterji, S M   | 9988  | Elliott, J M               | 10001 | Grant, G G           | 10023 |
| Berkaloff, A         | 9969  | Chattoraj, A N   | 10063 | Elms, K D                  | 10237 | Graves, P N          | 10024 |
| Berlowitz, A         | 10236 | Chen, T M        | 10274 | Elser, H J                 | 10393 | Green, A A           | 10387 |
| Beroza, M            | 10404 | Chernov, Yu I    | 9918  | Enders, B                  | 10341 | Green, N             | 10025 |
| 10471                |       | Chin, B H        | 10441 | Endrody-Younga, J          | 10243 | Greenberg, L         | 10122 |
| Berreur, P           | 9969  | Chiykowski, L N  | 10238 | Engelmann, F               | 10002 | Grewal, G S          | 10026 |
| Beshovski, V         | 9871  | Choudhuri, D K   | 9989  | Epstein, S S               | 10333 | Grillo Torrado, J M  | 10334 |
| Besovski, V L        | 9872  | Christie, P H    | 10401 | Erickson, J                | 10003 | Grissinger, E H      | 10392 |
| Betheder-Natibet, M  | 9970  | Chubareva, L A   | 10150 | Erokhina, L I              | 10435 | Grover, R K          | 10188 |
| Bevenue, A           | 10458 | Church, K        | 10151 | Erwin, D C                 | 10181 | Gruenhagen, R D      | 10440 |
| Bhatia, K R          | 9971  | Cilliers, C J    | 9990  | 10244, 10394, 10436, 10462 |       | Guelph Univ., Ontari | 10179 |
| Bhatia, S S          | 9972  | Clavel, M F      | 9995  | Esposito, J E              | 10442 | Gupta, V K           | 9897  |
| Bhattacharya, A K    | 9973  | Cleveland, T C   | 10068 | Eto, M                     | 10424 | Gurnet, A B          | 9935  |
| Bianchi, H           | 9967  | Cmelik, S H W    | 9991  | Evans, R A                 | 10283 | Haberkorn, A         | 10354 |
| Biliotti, E          | 9980  | Coble, H D       | 10311 | 10310                      |       | Hackman, W           | 9898  |
| Bishop, J B          | 10147 | Cognet, J        | 10220 | Fagel, G                   | 9890  | Hafiz, S             | 10173 |
| Bishop, Y            | 10333 | Colby, S R       | 10459 | Feltner, K C               | 10284 | Hafner, W            | 10271 |
| Bisht, D S           | 9974  | Cole, R H        | 10317 | 10285                      |       | Haines, L C          | 9899  |
| Biss, J M            | 10231 | Coleman, R L     | 10423 | Ferrar, P                  | 10004 | 9900                 |       |
| Biswas, P K          | 10273 | Coles, E H       | 10339 | Filipponi, A               | 10005 | Hall, I M            | 10134 |
| Bjerke, J S          | 10106 | Collins, H L     | 9992  | Fish, J R                  | 9961  | Halstead, D G II     | 9901  |
| Bjornstad, H O       | 10453 | Collins, J F     | 10152 | Fisher, W F                | 10363 | Hamilton, K C        | 10291 |

# AUTHOR INDEX

Hamilton, R I

|                     |        |                       |       |                    |       |                     |       |
|---------------------|--------|-----------------------|-------|--------------------|-------|---------------------|-------|
| Hamilton, R I       | 10335  | Joyner, A             | 10337 | Loev, B            | 10021 | Modi, B N           | 9932  |
| Hamilton, W         | 10273  | July, J R             | 10338 | Long, P L          | 10378 | Mohrig, W           | 10077 |
| Hammad, S M         | 10242  | Kadel, W L            | 10339 | Lopez-Gorge, J     | 10379 | Mohyuddin, A I      | 10272 |
| Hanbal, I           | 10242  | Kadoum, A M           | 10044 | Lowe, M D          | 10030 | Monastero, S        | 10256 |
| Hanna, A D          | 10245  | 10413, 10414          |       | Lower, H F         | 10253 | Monteoliva, M       | 10379 |
| Hansberry, R        | 10411  | Kaiser, M N           | 9908  | Lucchesi, J C      | 10162 | Mookherjee, P B     | 10251 |
| Hansing, E D        | 10189  | Kajita, H             | 10045 | Luke, H H          | 10183 | 10388               |       |
| Hardcastle, W S     | 10315  | Kalra, A N            | 10046 | Lutz-Ostertag, y   | 10430 | Moore, A D          | 10247 |
| Harjai, S C         | 9971   | Kamm, J A             | 10047 | Lyall, M           | 10344 | Moore, B J          | 10206 |
| 10027               |        | Kanitz, S             | 10395 | Lykken, L          | 10278 | Moraes, W B C       | 10443 |
| Harley, J M B       | 10028  | Kar, N C              | 10352 | MacCollom, G B     | 10399 | Morland, D E        | 10299 |
| Harmelin, M L       | 10123  | Karns, P D            | 10375 | MacConnell, W P    | 10485 | Moreno, D S         | 10101 |
| Harrington, G W     | 10368  | Kaufman, D D          | 10427 | Macer, R C F       | 10200 | Morey, D I          | 10199 |
| Harrison, R A       | 10128  | Kaul, C I             | 10043 | Mackauer, M        | 10059 | Morgan, I           | 10347 |
| Hart, L T           | 10429  | Kaurava, A S          | 10259 | Mackay, R J        | 10060 | Morgan, P W         | 10300 |
| Hatta, R            | 10190  | Kavadia, V S          | 10048 | Macruz, R          | 10327 | Moriarty, F         | 10078 |
| Hawes, D            | 10459  | Kawahara, F K         | 10396 | Magnoler, A        | 10061 | 10079               |       |
| Haynes, W C         | 10029  | Kay, B L              | 10283 | Mahoney, D F       | 10345 | Morris, O N         | 10257 |
| Hayward, K J        | 9902   | Kearby, W H           | 10049 | Maitland, P S      | 10062 | Moseman, J G        | 10207 |
| Heaton, G C         | 10141  | Kearney, P C          | 10468 | Maitlen, J C       | 10471 | Mosna, B            | 10005 |
| Helling, C S        | 10468  | Keaton, J A           | 10311 | Mall, S B          | 10063 | Muckenthaler, F A   | 9961  |
| Helrich, K          | 10412  | Keith, J A            | 10406 | Malone, B          | 10416 | Mukherjee, D        | 10352 |
| 10467               |        | Keller, J C           | 10025 | 10472              |       | Muma, M H           | 10264 |
| Hely, P C           | 10466  | Kelley, D C           | 10339 | Mance, V           | 10169 | Murray, M D         | 10347 |
| Henzell, R F        | 10030  | Kennedy, J S          | 10050 | Margolin, P        | 10329 | Muslero, P B de     | 10334 |
| Hepper, H C         | 9903   | Kennett, C E          | 10252 | Martin, J P        | 10400 | Musumeci, M R       | 10443 |
| Herhert, T T        | 10191  | Kerr, H D             | 10294 | Mathot, G          | 9916  | Nair, M R G K       | 10319 |
| Hermanson, H P      | 10412  | Kevan, D K M          | 9909  | Mathur, K C        | 10254 | Nakajima, M         | 10437 |
| 10467               |        | Khan, N H             | 10096 | Mathur, L M L      | 10064 | Nakano, A           | 10338 |
| Hewitt, G B         | 10246  | Khan, R M             | 10250 | Mathur, S B        | 10201 | Nalewaja, J D       | 10293 |
| Hewlett, P S        | 10031  | Khandelwal, G L       | 10193 | Mathys, G          | 10065 | 10301, 10440        |       |
| Hickin, C E         | 9904   | Khoo, S G             | 10051 | May, C             | 10280 | Narain, A           | 10208 |
| Himel, C M          | 10247  | Kianta, B             | 10157 | McCalmont, J R     | 10282 | Navarro, S          | 10389 |
| Himme, M van        | 10307  | Kiesling, R L         | 10194 | McCart, M          | 10417 | Neff, S E           | 10080 |
| Hodges, R W         | 9905   | Kilpatrick, R A       | 10195 | McCoy, C E         | 10016 | Neisham, O          | 10209 |
| Hoenigsberg, H F    | 10156  | Kim, Y B              | 10340 | McCoy, C W         | 10264 | Nestorova, E        | 10165 |
| Holbrook, F R       | 10032  | Kimbrough, J W        | 10022 | McCully, K A       | 10465 | Neundorf, M V       | 10460 |
| Holloway, J D       | 10033  | King, E G             | 10052 | 10473              |       | Newson, L D         | 10402 |
| Holthaus, L M       | 10106  | Kinugawa, J           | 10190 | McDaniel, B        | 9917  | Nieser, N           | 9922  |
| Hoogstraal, H       | 9908   | Klassen, W            | 10100 | McDonough, L M     | 10471 | Nieuwenhuis, E J    | 9923  |
| Hopkins, D E        | 10034  | Klein, J M            | 9910  | McDowell, L L      | 10392 | Nikolajev, G V      | 9924  |
| Horn, D H S         | 10130  | Kline, D M            | 10196 | McEnroe, W D       | 10067 | Nikolova, V         | 10081 |
| Horn, D J J         | 9937   | Knulle, W             | 10053 | McFlachlan, A J    | 10066 | Nilsson-Tillgren, T | 10210 |
| Howe, R W           | 10035  | Knuth, L A            | 10312 | McGavin, M D       | 10346 | Nilsson, M R        | 10348 |
| Howland, A F        | 10248  | Kohler, H             | 10428 | McGuire, J M       | 10206 | 10349               |       |
| Huang, Y-M          | 10164  | Kolehmainen-Seveus, L | 10210 | McGurk, D J        | 10138 | Nineham, A W        | 10355 |
| Hubby, J L          | 10159  | Koob, K               | 10111 | McLaughlin, R E    | 10068 | Nooden, L D         | 10444 |
| Hudson, N M         | 9876   | Kopp, E               | 10271 | McMahon, K J       | 10415 | Norgard, D W        | 10106 |
| Huggans, J L        | 9937   | Koprowski, H          | 10360 | McNew, G L         | 10202 | Norland, J F        | 10100 |
| Hukuhara, T         | 10126  | 10361                 |       | McShan, W H        | 10106 | Norman, P A         | 10258 |
| Hull, R J           | 10292  | Kovoor, A             | 10439 | McWhorter, C G     | 10309 | Norris, D M         | 10082 |
| Hunter, R C         | 10408  | Koyumdjieva, M        | 9911  | McClelland, G A H  | 10072 | Norris, F A         | 10454 |
| Huot, L             | 9993   | 10364                 |       | Medler, J T        | 9956  | Ochs, G             | 9925  |
| Hurpin, B           | 10036  | Krehan, I             | 10129 | 9957               |       | Odak, S C           | 10259 |
| 10133, 10249        |        | Krogerus, H           | 9912  | Medvedev, L N      | 9918  | Ofori, C S          | 10445 |
| Hurst, G W          | 10037  | 9913                  |       | Meggitt, W F       | 10296 | Ogloblin, A A       | 9926  |
| Hurst, H R          | 10284  | Kugler, J             | 10054 | Mehrotra, K N      | 10098 | Oguni, I            | 10446 |
| 10285               |        | Kulka, M              | 10222 | Meikle, R W        | 10401 | Oldroyd, H          | 9927  |
| Hylin, J W          | 10441  | Kunze, G W            | 10397 | Meinander, M       | 9919  | Oshima, K           | 10446 |
| Ilnicki, R D        | 10316  | Kuratie, H            | 10295 | Meiniel, R         | 10430 | Ou, S H             | 10198 |
| Imaseki, H          | 10446  | Kuwert, E             | 10360 | Meneghini, M       | 10443 | Padhi, G K          | 10262 |
| Ing, B              | 10038  | 10361                 |       | Menhinick, E F     | 10069 | Pal, B P            | 10211 |
| Inukai, T           | 100318 | L'Arrivee, J C M      | 10020 | 10255              |       | Pamic, S            | 10169 |
| Iperti, G           | 10039  | Lacher, V             | 10055 | Menon, M G R       | 9920  | Pan, M L            | 10083 |
| Israel, P           | 10075  | Lagace, C F           | 9914  | 10365              |       | Pandey, N D         | 10084 |
| Ivashkin, V M       | 10382  | Lal, R                | 10048 | Menon, m G R       | 9921  | Pant, N C           | 9974  |
| Jackson, C G        | 10040  | Lamartiniere, C A     | 10429 | Mentzelos, I       | 10070 | 10098               |       |
| Jackson, D          | 9906   | Lamey, H A            | 10197 | Merkle, M G        | 10300 | Panwar, V P S       | 9988  |
| Jacob, A            | 10319  | Lammler, G            | 10341 | Merkle, O G        | 10195 | Papasolomontos, A   | 10212 |
| Jacobsen, N S       | 10368  | Larson, A D           | 10429 | Mertz, D B         | 10071 | Papavizas, G C      | 10213 |
| Jacobson, M         | 10025  | Launer, J E           | 10469 | Messner, B         | 10077 | Pareek, R P         | 10438 |
| Jagadish, A         | 9867   | Lavciev, V            | 10165 | Metabele,          | 10168 | Pariikh, G C        | 9917  |
| Jakovljevic, D      | 10336  | Lavers, D W           | 10376 | Meyer, R E         | 10300 | Parker, A H         | 10085 |
| Jaques, R P         | 10041  | Lavy, T L             | 10477 | Meyers, J          | 10073 | Parker, B           | 10399 |
| Jarnicka-Stanios, H | 10042  | Lawrence, J H         | 10470 | Meynadier, G       | 10036 | Parry, W H          | 10086 |
| Jeannin, G          | 10439  | Lee, C C              | 10377 | 10133              |       | Parshad, B          | 9948  |
| Jefferies, D J      | 10425  | Lee, D L              | 10378 | Michno-Zatorska, Z | 10203 | 10087, 10117        |       |
| Jeffery, L S        | 10293  | Lee, W R              | 10147 | Millard, B J       | 10378 | Parsons, D A        | 10392 |
| Johnson, J          | 10383  | LeGrand, H E          | 10398 | Miller, B E        | 10007 | Patana, R           | 10040 |
| Johnson, R R        | 10442  | Leibovitz, L          | 10342 | Miller, T          | 10073 | Patel, H K          | 10088 |
| Johnstone, D B      | 10399  | Lempke, B J           | 10056 | 10074              |       | Patel, V C          | 10088 |
| Jonathan, J K       | 9897   | Lensny, Y             | 10057 | Milles, K          | 10271 | Pathak, K D         | 10228 |
| Jones, J P          | 10192  | Lenz, M               | 10343 | Millhollon, R W    | 10297 | Pathak, M D         | 10234 |
| Jordan, P A         | 10375  | Lewis, D J            | 9915  | Milo, G E          | 10204 | Pavan, C            | 10158 |
| Joshi, H C          | 10043  | Lewontin, R C         | 10159 | Minshall, W H      | 10298 | Pearson, K G        | 10089 |
| 10250               |        | Liang, T T            | 10058 | Minter, D M        | 9915  | Pearl, G R          | 10351 |
| Joshi, L M          | 10228  | Lichtenstein, E P     | 10058 | Misato, T          | 10205 | Pederson, V D       | 10214 |
| Joshi, M M          | 10178  | Ling, K C             | 10198 | Misawa, T          | 10180 | Pegler, D N         | 10215 |
| Josifov, M          | 9907   | Lingg, A J            | 10415 | Mishra, R K        | 10266 | 10216, 10217, 10218 |       |
| Joslyn, J J         | 10485  | Linn, M B             | 10209 | Misra, B C         | 10075 | Pelov, P            | 9928  |
| Jotwani, M G        | 10251  | Littrell, R H         | 10199 | Misra, S S         | 10365 | Penney, M M         | 10062 |
| 10270, 10388        |        | Lloyd, C J            | 10114 | Mitchell, R        | 10076 | Perelents, C        | 10136 |



# AUTHOR INDEX

Zuberi, R I

|                   |       |                   |       |                     |       |                     |       |
|-------------------|-------|-------------------|-------|---------------------|-------|---------------------|-------|
| Perkow, W         | 10474 | Savulescu, A      | 10221 | Stahl, J            | 10065 | Villemson, S        | 10187 |
| Perrott, D C F    | 10090 | Saxena, D K       | 10263 | Stallman, N D       | 10358 | Vir, D              | 10228 |
| Peters, E J       | 10303 | Saz, H J          | 10369 | Staples, K J        | 10357 | Voerman, S          | 10479 |
| Peters, J V       | 9929  | Schaerffenberg, B | 10353 | Steele, R W         | 10237 | Voss, G             | 10419 |
| Petrova, N A      | 10150 | Schall, E D       | 10356 | Steiner, J          | 10323 | Wadhl, S R          | 9948  |
| Phatak, H C       | 10201 | Scheinberg, E     | 10161 | Stenersen, J        | 10449 | Waerebeke, D. van   | 10039 |
| Phelps, R J       | 10091 | Schildknecht, H   | 10111 | Steward, K K        | 10306 | Wagner, E           | 9949  |
| 10092             |       | Schmeling, B von  | 10222 | Stickel, L F        | 10407 | 9950, 9951, 9952    |       |
| Philogene, B J R  | 10093 | Scholtzseck, E    | 10012 | Stoffolano, J G     | 10120 | Waliss, A C         | 10481 |
| Piercy, C K       | 10337 | 10354             |       | Stone, E            | 10406 | Waldbauer, G P      | 9973  |
| Pitre, H N        | 9992  | Schroder, R F W   | 9937  | Strambi, A          | 10121 | Wallace, H A II     | 10229 |
| Poinar, G O       | 10094 | Schulz, K R       | 10058 | Streams, F A        | 10122 | Wallace, J B        | 10080 |
| Pokrovskiy, A A   | 10418 | Selhime, A G      | 10264 | Streu, H T          | 10018 | 10139               |       |
| Pollard, E        | 10260 | Sevastopulo, D G  | 9938  | Stritzke, J F       | 10303 | Waller, G R         | 10138 |
| Porter, M L       | 10475 | 9939              |       | Strout, R G         | 10354 | Ware, G W           | 10403 |
| Posada O, L       | 10261 | Shaldybida, E S   | 9940  | Struble, G          | 10267 | 10480               |       |
| Power, R J B      | 10095 | Sharma, G C       | 9988  | Stryckers, J        | 10307 | Waterston, J M      | 10215 |
| Pradhan, S        | 10390 | Sharma, S K       | 10112 | Stussi, T           | 10123 | 10216, 10217, 10218 |       |
| Prakash, O        | 10208 | Shatoury, H H     | 10113 | Sullivan, D T       | 10450 | Wathanakol, L       | 10197 |
| Prakash, S        | 10159 | Shaw, D D         | 10114 | Sullivan, N D       | 10358 | Watson, D W         | 10340 |
| Prasad, R         | 10193 | Shaw, W C         | 10486 | Sumina, I           | 10190 | Watt, J C           | 9953  |
| Prasher, R D      | 10188 | Shay, J W         | 10115 | Surin, P            | 10197 | 10140               |       |
| Price, R D        | 9930  | Sheridan, J E     | 10223 | Sutton, R A         | 10258 | Wax, L M            | 10312 |
| Price, W C        | 10219 | Sherwood, C R     | 10465 | Suzuki, S           | 10190 | Wegorek, W          | 10124 |
| Prufer, P         | 10431 | Shishido, T       | 10426 | Swanson, C R        | 10308 | Weise, G            | 10431 |
| Pryor, R L        | 10447 | Shrivastav, H P O | 10381 | Switzer, C M        | 10286 | Wene, G P           | 10269 |
| Puscasu, A        | 10221 | Shulman, S        | 10166 | 10287, 10288        |       | Westwood, M N       | 10453 |
| Puthz, V          | 9931  | Siddiqui, K H     | 9988  | Szmidt, A           | 10124 | Wettstein, D von    | 10210 |
| Rael, C D         | 10007 | Siewierski, M     | 10412 | Tahori, A S         | 10125 | Wheeler, J R        | 10007 |
| Rahman, S J       | 10096 | 10467             |       | Tallent, W H        | 10461 | Wheeler, W B        | 10420 |
| Rahn, E M         | 10295 | Silfverberg, H    | 9941  | Tamura, B           | 10190 | Whitham, F          | 9987  |
| Rawat, R R        | 9932  | Silverstein, R M  | 10105 | Tanada, Y           | 10126 | Whitworth, J W      | 10313 |
| 10097, 10263      |       | Simanton, W A     | 10264 | Tasehev, D G        | 9943  | Wicks, G A          | 10277 |
| Rawnsley, J       | 10391 | Simmons, E E      | 10115 | Taylor, H J         | 10030 | Wiktor, T J         | 10360 |
| Ray, B            | 10304 | Sinclair, W       | 9942  | Taylor, R W         | 9944  | 10361               |       |
| Ray, S            | 10098 | Singh, G R        | 10224 | Taylor, T A         | 10268 | Wilcox, J           | 10248 |
| Raychaudhuri, S P | 10176 | Singh, J          | 10320 | Taylorson, R B      | 10309 | Wilcox, M           | 10304 |
| Read, K H         | 10483 | 10478             |       | Taylorson, R. B.    | 10451 | 10314               |       |
| 10484             |       | Singh, O P        | 10116 | Teasley, J I        | 10421 | Wiley, M            | 10481 |
| Reich, F P        | 10099 | Singh, R P        | 10087 | Teller, W H         | 10083 | Wilkin, D R         | 10387 |
| Reich, J J        | 10099 | 10117             |       | Teotia, T P S       | 10084 | Wilkinson, R E      | 10315 |
| Reid, W. M        | 10383 | Singh, V S        | 10127 | 10116, 10127, 10135 |       | Williams, M C       | 10454 |
| Reinecke, L H     | 10100 | Sinha, R C        | 10238 | Thiele, G F         | 10128 | Williams, P W       | 10421 |
| Rhodes, L J       | 10029 | Sirear, P         | 10251 | Thiele, H U         | 10129 | Williams, S A       | 9954  |
| Rice, R E         | 10101 | 10270, 10388      |       | Thind, B S          | 10226 | 9955                |       |
| Rich, S           | 10476 | Skryabine, K I    | 10382 | Thomas, C           | 10376 | Wilson, H P         | 10316 |
| Richard, G        | 10220 | Slack, R          | 10355 | Thomas, H           | 10374 | Wimber, D E         | 10151 |
| Riek, E F         | 9933  | Slater, C H       | 10305 | Thomson, J A        | 10130 | Wisk, E L           | 10317 |
| Riemann, J G      | 10102 | Slife, F W        | 10312 | Thorson, B J        | 10102 | Wollberg, Z         | 10054 |
| Riemer, D N       | 10448 | Smiley, I E       | 10356 | Tigner, J A         | 10119 | Wollerman, E H      | 10141 |
| Riner, J C        | 10482 | Smith, C N        | 10118 | Tint, H             | 10359 | Wood, R H           | 10362 |
| Riteher, P O      | 9934  | Smith, K M        | 9960  | Todd, D H           | 10131 | Woodmansee, C W     | 10295 |
| Robards, G E      | 10351 | Smith, P D        | 10162 | Toth, S J           | 10448 | Woolf, C            | 10362 |
| Robert, P         | 10036 | Smith, R. F.      | 10265 | Tottenham, C E      | 9945  | Worff, G L          | 10171 |
| Roberts, P A      | 10160 | Smith, W H        | 10225 | Tsukamoto, M        | 10163 | Wrage, L J          | 10171 |
| Robinson, M H     | 10103 | Snow, K R         | 9962  | Tueller, P T        | 10310 | Wright, D S C       | 10186 |
| Roek, G C         | 10104 | Sobel, Z          | 10125 | Uffen, R W J        | 10132 | 10230, 10231        |       |
| Rodin, J O        | 10105 | Sobolev, A A      | 10382 | Umbarger, H E       | 10329 | Wright, F C         | 10482 |
| Roeth, F W        | 10477 | Sokol, F          | 10360 | Upchurch, R P       | 10311 | Wu, Y F             | 10455 |
| Roller, H         | 10106 | Soller, M         | 10119 | Uritani, I          | 10446 | Yadav, T D          | 10251 |
| Rosay, B          | 10107 | Sonenshine, D E   | 10119 | Vaehrabhorn, V      | 10223 | 10270, 10388        |       |
| Rosen, D          | 9964  | Sousa, O E        | 10015 | Vago, C             | 10036 | Yadava, D R         | 10084 |
| Rossler, Y        | 9964  | Spadafora, R R    | 10053 | 10133               |       | Yamamoto, H         | 10190 |
| Roth, L M         | 9935  | Spangler, P E     | 10442 | Vail, P V           | 10134 | Yarwood, C E        | 10232 |
| Round, M C        | 10380 | Spink, W T        | 10052 | Vakil, U K          | 10324 | Yeo, C Y            | 10458 |
| Rounds, H D       | 10108 | Spratt, D M       | 10376 | Varma, J P          | 10227 | Yinon, U            | 10142 |
| Rozen, J G        | 10109 | Springer, W T     | 10383 | Varshney, R K       | 10135 | Yonke, T R          | 9956  |
| Ruth, G           | 10335 | Sreenivasan, A    | 10324 | Vasilev, I B        | 9946  | 9957                |       |
| Sachan, J N       | 10110 | Srekajs, A        | 10169 | Vendrell, M         | 10452 | York, G             | 9937  |
| Sahu, H R         | 10097 | Srivastava, B I S | 10204 | Venkatesh, M V      | 10027 | Young, J A          | 10283 |
| Salceda, V M      | 10153 | Srivastava, B K   | 10433 | Verecke, A          | 10177 | Young, W R          | 9988  |
| Saldarriaga V, A  | 10261 | Srivastava, B P   | 10266 | Verma, P S          | 10136 | Yurkiewicz, W J     | 10143 |
| Sands, W A        | 9936  | Srivastava, M L   | 10087 | Vetch, J VAN DER    | 10177 | Zahner, H           | 10341 |
| Sasmal, N         | 10352 | Srivastava, P D   | 10320 | Vevai, E F          | 9947  | Zavattari, E        | 10144 |
| Satpathy, J M     | 10262 | 10321, 10322      |       | Viek, K             | 10137 | Zemskaya, A A       | 10145 |
|                   |       | Srivastava, Y N   | 10320 |                     | 10138 | Zuberi, R I         | 10173 |





# ORGANIZATIONAL INDEX

- Abbott Labs., North Chicago, Ill.  
10460
- Agricultural Research Council (Central Africa)  
10092
- Agricultural Research Council (Central Africa)  
Tsetse Biology Unit  
10091
- Agricultural Research Service, Beltsville, Md.  
Crops Research Div.,  
10196
- Agricultural Research Service, Hyattsville, Md.  
Animal Health Div.  
10325
- Aligarh. muslim University  
10096
- Allied Chemical Corp., New York, N. Y.  
10362
- American Cyanamid Co., Stamford, Conn.  
10337
- American Home Products Corp., New York, N. Y.  
10359
- Arkansas. university  
Dept. of Entomology, Fayetteville, Ark  
10016
- Auckland. university  
Dept. of Botany  
10175
- Australia. commonwealth Scientific and Industrial  
Research  
Organization; Plant Physiology Unit, Ryde  
10452
- Belgium. rijksfakulteit der  
Landbouwwetenschappen, Ghent  
10307
- Bundesanstalt für Materialprüfung, Berlin-  
dahlem,  
West Germany; Fachgruppe, Biologische Materi-  
alprüfung  
10343
- Calicut. centre  
Dept. of Zoology  
9978
- California. dept. of Public Health  
Bureau of Vector Control, Fresno  
10107
- California. university  
Dept. of Biological Control, Riverside  
10241
- Cambridge. university  
Moltano Institute  
10370
- Canada. atomic Energy  
Biology and Health Physics Division, Chalk  
River  
9984
- Canada. dept. of Agriculture  
Research Station, Nova Scotia  
10041
- Canada. Dept. of Agriculture  
Research Institute  
10059
- Chas. Pfizer and Co., Inc., New York, N. Y.  
10330
- Cold Spring Harbor Laboratory, N. Y.  
10329
- Consortium für Elektrochemische Industrie G.  
m.b.H.,  
Munich, Germany  
10271
- Delaware. university  
Dept. of Plant Science  
10295
- Department of Agriculture, Washington, D. C.  
Agricultural Research Service  
10331, 10384
- Dept. of Agriculture, New South Wales  
10466
- Dow Chemical Co., Midland, Mich.  
10281
- Durham. university  
Dept. of Zoology, England  
9975
- East African Trypanosomiasis Research  
Organization, Uganda  
10028
- England. agricultural Research Council  
Pest Infestation Laboratory  
10114
- Entebbe. east African Virus Research Institute.  
10072
- Entomological Society of Helsinki  
9941
- Florida. university  
Dept. of Agronomy  
10304
- Florida. university  
Dept. of Zoology  
10076
- Forest Service Madison, Wisc.  
Forest Products Lab.  
10182
- France. centre National de la Recherche  
Scientifique,  
Montpellier  
10133
- France. institut National de la Recherche  
Agronomique  
Station de Recherche Cytopathologiques, Mont-  
pellier  
10019
- France. organisation Internationale de Lutte  
Biologique  
9893
- France. organization Internationale de Lutte  
Biologie  
10249
- Georgia. university  
Dept. of Poultry Science  
10383
- Georgia. university  
Dept. of Zoology and Institute of Ecology  
10255
- Georgia. university College of Agriculture  
10274
- Glasgow. university  
Dept. of Zoology  
10062
- Government Agricultural College, Kanpur  
10116
- Harvard University  
Biological Laboratories  
9981, 9982, 9983
- Hawaii. university  
Dept. of Agricultural Biochemistry  
10441
- Ibadan. university  
Dept. of Zoology  
10085
- Illinois. university  
Dept. of Entomology  
10074
- Indian Agricultural Research Institute  
Division of Entomology, Delhi  
10088
- Indian Agricultural Research Institute  
Division of Entomology, New Delhi  
10048
- Indian Agricultural Research Institute  
Division of Mycology and Plant Pathology, New  
Delhi  
10201
- Indian Lac Research Institute  
Division of Entomology, Ranchi  
10135
- Israel. institute for Biological Research, Ness-  
Ziona  
10125
- Kalyani. university  
Dept. of Zoology  
9989
- Koln Univ., West Germany  
Inst. für vergleichende Tierphysiologie  
9968
- Liverpool. university  
Dept. of Zoology, England  
10051
- London. university  
Dept. of Zoology, Surrey  
9966
- Louisiana. state University Medical Center  
Dept. of Tropical Medicine and Medical  
Parasitology  
10377
- Menlo Park. stanford Research Institute  
Life Sciences Division  
10105
- Missouri Univ., Columbia  
Agricultural Experiment Station  
10483
- Moscow. akademiia Nauk  
Gel'mintologicheskai Laboratory, USSR  
10382
- National Pest Control Association, Inc.  
10385
- Nederlandse Entomologische Vereniging,  
Amsterdam  
9947
- New South Wales. royal Zoological Society,  
Mosman  
9929
- North Carolina. state University  
Crop Science Dept.  
10311
- North Carolina. university  
Dept. of Biochemistry  
10152
- North Carolina. university  
Dept. of Zoology  
10162
- North Dakota. state University  
Dept. of Agronomy  
10440
- North Wales. university College  
Dept. of Agricultural and Forest Zoology  
10086
- Oak Ridge. national Laboratory  
Biology Division, Tenn.  
10154
- Oak Ridge. national Laboratory  
Radiation Ecology Section  
10069
- Oklahoma State Univ., Stillwater  
Dept. of Physiology and Pharmacology  
10368
- Oregon. state University  
Dept. of Entomology  
9965
- Oregon. state University  
Dept. of Soils  
10302
- Ottawa. animal Research Institute  
Central Experimental Farm, Canada  
10161
- Oxford. university  
Hope Dept. of Entomology  
10009, 10010
- Pacific Science Center, Seattle, Wash.  
10350
- Purdue University  
Dept. of Botany and Plant Pathology, Lafayette  
10292
- Queensland. dept. of Primary Industries  
Animal Health Station, Oonoonba  
10346
- Rhode Island. providence College  
10024
- Rhodesia. university College  
Dept. of Biology  
10066
- Rockefeller University, New York (city)  
10153
- Smith Klein and French Labs., Philadelphia, Pa.  
10021
- Societe de Zoologie agricole  
Laboratoire de Zoologie, Paris, France  
10149
- Society of Chemical Industries, Belgrave Square,  
London  
10436
- Society of Chemical Industry, Belgrave square,  
London  
10462
- Sofia. academie Bulgare des Sciences  
Section de Biologie  
9868, 9872, 9873, 9911, 9943, 9946, 10081,  
10165, 10371
- Sofia. Academie Bulgare des Sciences  
Section de Biologie  
9871, 9907, 9928
- South London Entomological and Natural History  
Society,  
England  
9904
- Southampton. university  
Dept. of Zoology  
10011
- Surrey. commonwealth Mycological Institute  
10215, 10216, 10217, 10218

# ORGANIZATIONAL INDEX

- Takeda Pharmaceutical Industries, Ltd., Osaka,  
Japan  
10190
- Tucuman Nacional Univ. argentina  
Inst. Miguel Lillo  
9902
- Tucuman Nacional Univ., Argentina  
Inst. Miguel Lillo  
9926
- U. S. agricultural Research Service.  
Crop Production Engineering Research Branch  
10484
- U. S. dept. of Agriculture. agricultural Research  
Service  
Boll Weevil Research Laboratory, State College,  
Miss.  
10068
- U. S. dept. of Agriculture. agricultural Research  
Service  
Crops Research Division  
10299
- U. S. dept. of Agriculture. agricultural Research  
Service  
Crops Research Division, College Station  
10308
- U. S. dept. of Agriculture. agricultural Research  
Service  
Crops Research Division, Columbia, Mo.  
10294
- U. S. dept. of Agriculture. agricultural Research  
Service  
Entomology Research Division, Riverside, Cal.  
10101
- U. S. dept. of Agriculture. agricultural Research  
Service  
Metabolism and Radiation Research Laboratory,  
Fargo, N. D.  
10100
- U. S. dept. of Agriculture. cooperative State  
Research  
Service, Wash., D. C.  
10265
- U. S. Agricultural Research Service  
9959
- U. S. Agricultural Research Service, Riverside  
Entomology Research Division  
10134
- Univ. of Illinois, Urbana  
10209
- Virginia. polytechnic Institute  
Dept. of Entomology  
10104
- Wisconsin University. madison  
Dept. of Zoology  
10106
- Wisconsin. university  
Dept. of Entomology, Madison  
9956, 9957
- World Review of Pest Control. fisons Limited  
Cambridge Division, England  
10245





U.S. DEPARTMENT OF AGRICULTURE  
WASHINGTON, D.C. 20250

OFFICIAL BUSINESS

To stop mailing ☐ or to change your  
address ☐ send this sheet with new  
address to Pesticides Information  
Center, National Agricultural Library,  
Washington, D.C. 20250.



POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF AGRICULTURE

G 3853













